

# Northwest Region, Area 1 Integrated Roadside Vegetation Management Plan

2009



**Washington State  
Department of Transportation**  
Maintenance and Operations Division

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## **Summary**

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This plan explains the Washington State Department of Transportation's (WSDOT) policy and practice for maintenance of roadside vegetation for Maintenance Area 1 within the agency's Northwest Region. This area manages vegetation within approximately 210 miles of state highway corridor in Whatcom and northwest Skagit Counties. In addition to the Interstate 5 corridor between Burlington and the Canadian border, the area maintains State Route (SR) 9 throughout Whatcom County and all of SR 11 (Chuckanut Drive), 539, 542 (Mt. Baker Highway), 543, 544, 546, 547, and 548. A map of the area is included as **Figure 1** on the following page.

The primary objectives in maintenance of roadside vegetation within the area are in relation to safety of the highway users, preservation of the highway infrastructure, and control of legally designated noxious weeds where they occur on the right of way. Other considerations include protection and preservation of natural environment, preserving and enhancing the natural scenic quality of the roadside, and being a good neighbor to the many adjoining property owners. In all cases, roadside vegetation maintenance activities are planned and conducted in a way that discourages or eliminates unwanted vegetation and promotes desirable vegetation. This is the basic premise of Integrated Vegetation Management (IVM) and the foundation of the program.

This document and associated information management tools serve as the primary reference for maintenance of roadside vegetation in the area. Included is detailed information on policies and locations for planned routine maintenance practices, reoccurring weed infestations, sensitive areas, and other areas with special management considerations. Also included are guidelines and prescriptions for best management practices in dealing with roadside vegetation problems and opportunities. In effect, this plan supports WSDOT's compliance with state law (RCW 17.15) by implementing the principles of Integrated Pest Management for the management of roadside vegetation. It also supports WSDOT's long-range goals for the management of roadsides to:

- Create naturally stable, sustainable plant communities
- Improve effectiveness and efficiency in the control of weeds and unwanted trees and brush
- Reduce maintenance cost and herbicide use over time

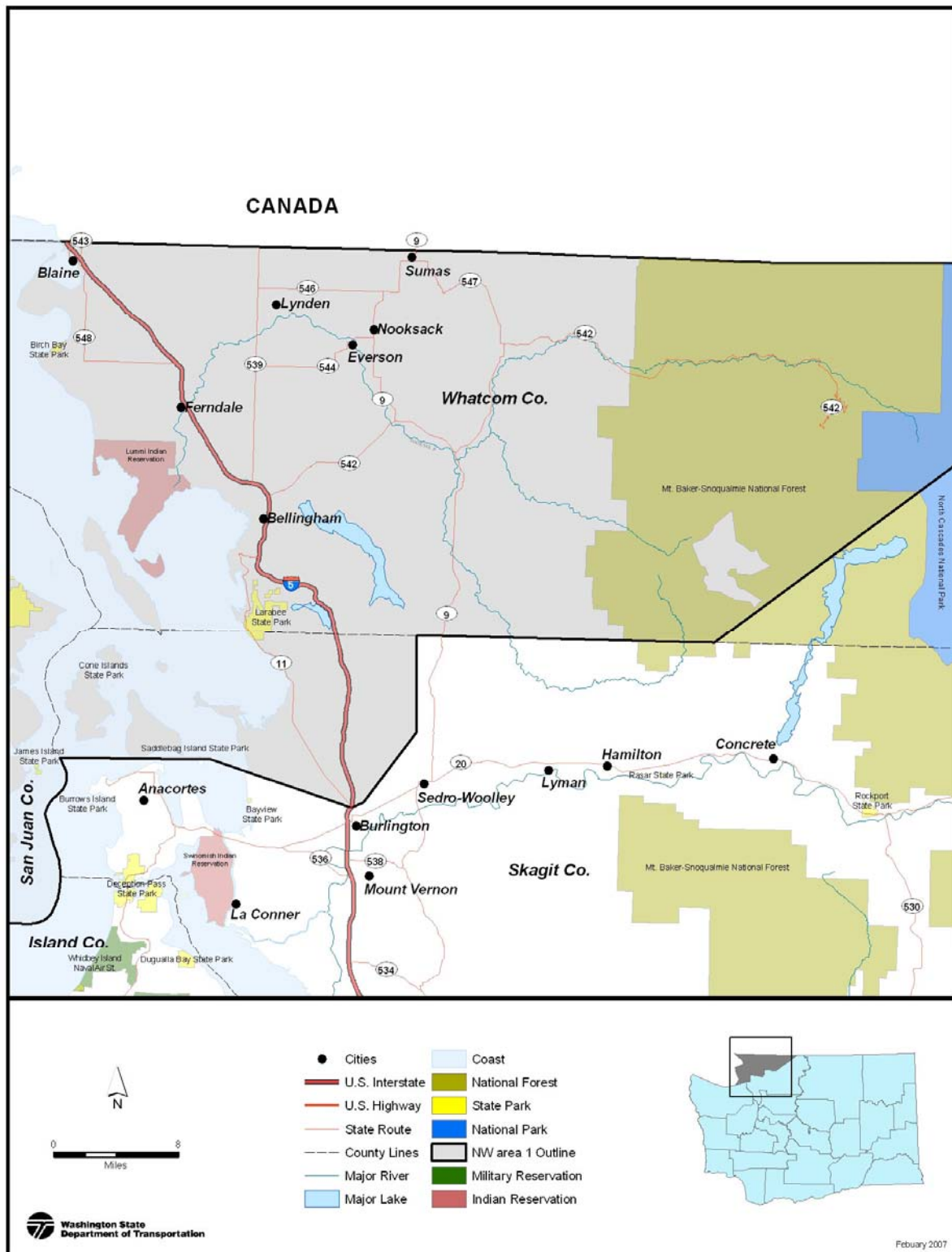
This plan is organized around the major categories of roadside vegetation maintenance work. The major categories include: Zone 1 (or pavement edge maintenance), Routine Mowing, Noxious Weed Control, Nuisance Weed Control, Tree and Brush Control, and Special Maintenance Areas.

The management of roadside vegetation is a dynamic process and it is intended that this plan be continuously adapted over time based on input from a variety of sources. An integral component of the process is a database for recording IVM treatments for specific vegetation controls and locations, and to record information on follow up evaluation on these treatments. Annual area meetings will be held to discuss what is learned each year and refine the plan over time.

WSDOT is also requesting that local public and private entities with an interest in weed control and roadside vegetation management provide input on the plan and cooperate in efforts where appropriate. Additional copies of the draft plan are available online: [www.wsdot.wa.gov/maintenance/vegetation/mgmt\\_plans.htm](http://www.wsdot.wa.gov/maintenance/vegetation/mgmt_plans.htm), hard copies can also be provided upon request. Please contact Tony Hernandez or Ray Willard at the numbers listed below for questions or comments:

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**Area Map**  
Figure 1

## ***Roadside Management Considerations***

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The primary objectives for maintenance of roadside vegetation are to provide for safe highway operation and to comply with legal regulations for control of noxious weeds and protection of the environment. Overall WSDOT maintenance policy and procedures are defined in Chapter 6 of the WSDOT Maintenance Manual (M51-01, March 2002)

[www.wsdot.wa.gov/Publications/Manuals/M25-31.htm](http://www.wsdot.wa.gov/Publications/Manuals/M25-31.htm)

### **Visual Quality**

It is also important to maintain appropriate visual standards in the appearance of the roadside. All maintenance activities should be conducted in a way that minimizes visual impacts such as wide spread “brown-out” from herbicides or shattered limbs from side trimming. Roadside should look as natural as possible throughout the year. Appropriate visual quality for roadides throughout the state is defined in the WSDOT Roadside Classification Plan (June 1996)

[www.wsdot.wa.gov/Publications/Manuals/M51-01.htm](http://www.wsdot.wa.gov/Publications/Manuals/M51-01.htm)

### **Operational Zones**

WSDOT roadides are divided into several zones for the purposes of assigning management objectives, maintenance needs, and thresholds for triggering vegetation maintenance actions. Noxious weed species designated for control by state and county law are controlled throughout all zones. Not all management zones occur along all state highways. In some cases the narrow width of the right-of-way or adjoining land-use, limits the operational zones to Zone 1 and/or a narrow Zone 2 only. Roadside vegetation management zones are illustrated in **Figure 2** below and defined as follows:

**Zone 1** – A vegetation free gravel shoulder, where needed, is maintained as a one to three-foot wide strip to provide for key maintenance, operational, safety, and pavement and guardrail preservation needs.

**Zone 2** – The operational zone extends from the edge of Zone 1 or the pavement edge to a width necessary to provide for safe errant vehicular recovery, maintain sight distance at corners and intersections, and provide for other operational, safety, and environmental functions.

**Zone 3** – In areas with sufficient right-of-way width, a buffer or transition zone extends from Zone 2 to the right-of-way line to provide a buffer or transitional area between the highway facility and adjacent land uses. This area is maintained selectively, and to the greatest degree possible as a self-sustaining plant community, to minimize erosion as well as the growth of weeds and undesirable trees and brush.

### **Roadside Maintenance Activities**

All roadside maintenance activities are to be planned and conducted in a way that discourages or eliminates unwanted vegetation and promotes desirable vegetation. This is the basic premise of Integrated Vegetation Management. In every case it is essential that the results of maintenance activities are evaluated and adjusted as necessary to maximize efficiency and effectiveness. However, in some cases maintenance activities are conducted more consistently on an annual basis, such as maintenance of Zone 1 where required, and routine mowing where specified.

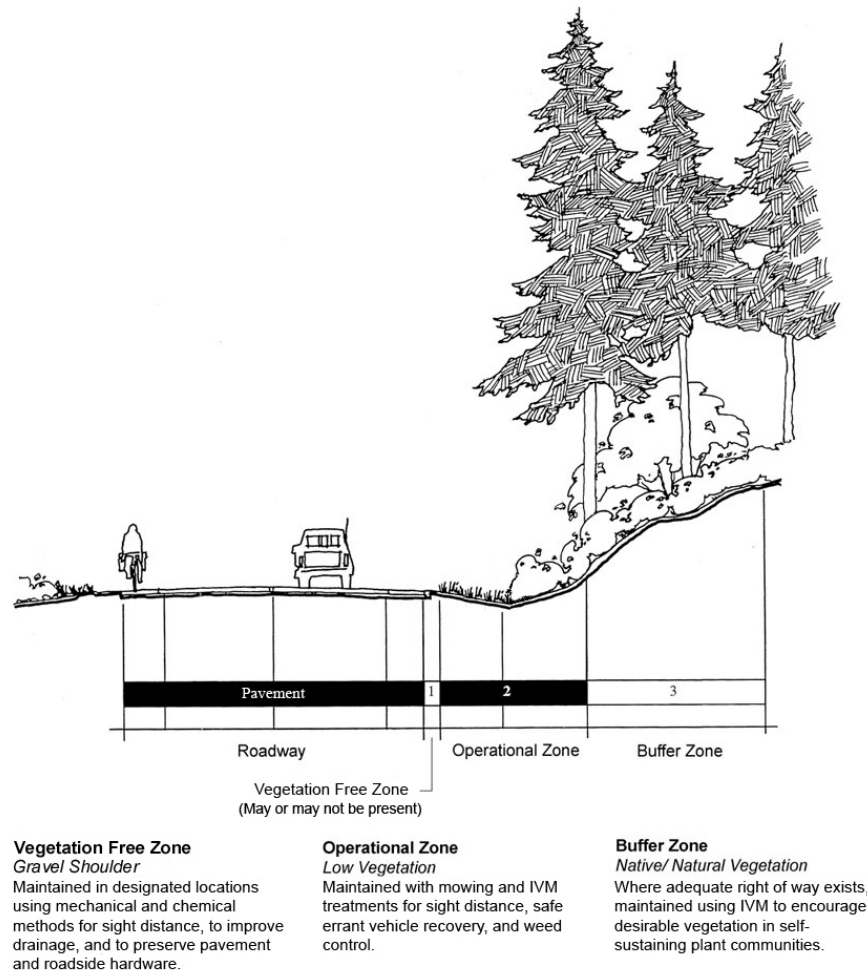
**Routine Maintenance Activities** – When vegetation maintenance activities are intended to keep the area of roadside being treated in an annually controlled condition, they are considered routine. This is more critical for areas of vegetated roadside near the travel lanes, edge of pavement, and around guardrails. This plan provides prescriptions and gives locations for routine maintenance activities including maintenance of Zone 1 and annual mowing.

**Integrated Vegetation Management Activities** – Although all activities are to be planned and conducted in accordance with the principles of IVM, many vegetation maintenance activities are intended to target a specific type or types of unwanted plants.

By carefully planning and carrying out these target specific activities it is possible over time to establish desirable vegetation, which will prevent the re-infestation of unwanted plants. The process for determining and carrying out IVM actions is illustrated in **Figure 3** below. This plan provides information, locations, and gives prescriptions for selective control of weeds and other unwanted vegetation and the promotion and establishment of desirable vegetation. Further information and guidance on the application of IVM is available in the document Integrated Vegetation Management for Roadsides (WSDOT, July 1997) [www.wsdot.wa.gov/maintenance/pdf/IVM.pdf](http://www.wsdot.wa.gov/maintenance/pdf/IVM.pdf)

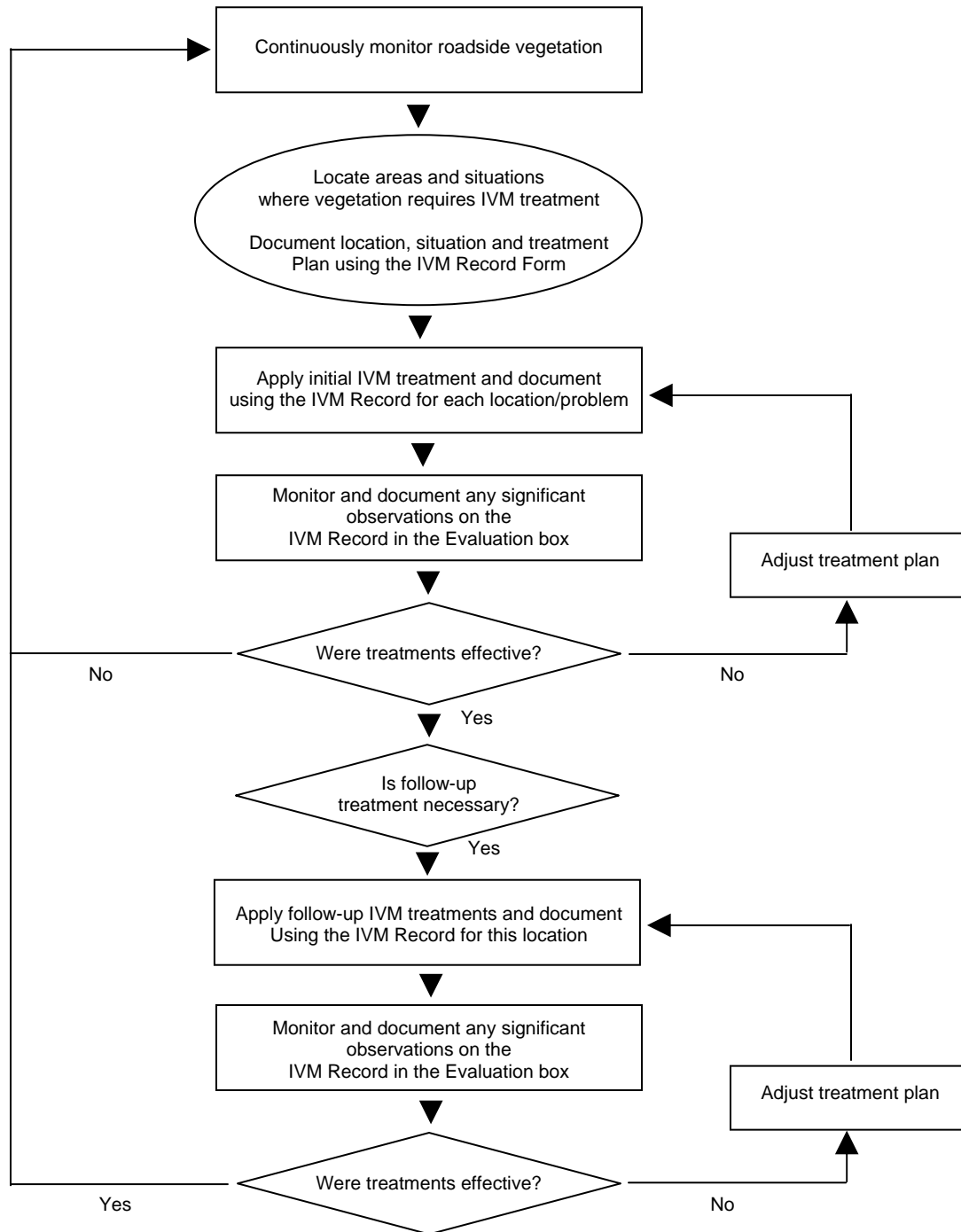
**Special Maintenance Areas** – In some locations there are unique situations that require consideration in determining appropriate vegetation maintenance actions. Examples of these are: environmentally sensitive areas, areas with special neighbor concerns, areas where a higher level of maintenance is expected such as gateway interchanges or formally landscaped areas, or along highways that cross tribal or federal lands. This plan provides information and guidance on the locations and unique requirements or restrictions on maintenance activities in all of these situations throughout the area.

**Herbicide Use** – WSDOT has conducted independent research on herbicide risk from toxicity and environmental fate, based specifically on agency application methods and use rates. Findings from this research have been used to establish an approved palette of herbicides and application limits for state highways. A complete summary of herbicides approved for use on WSDOT rights of way is included in **Appendix B**.



**Typical Roadside Vegetation Management Zones**

Figure 2



**The IVM Decision-Making Process**  
Figure 3

## **Area IVM Goals**

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The purpose of this section is to identify the highest priority roadside vegetation management needs in NW Region, Area 1. Priorities are listed by specific activities and locations in relation to the three major groups for roadside vegetation maintenance performance: Control of Vegetative Obstructions, Noxious Weed Control, and Nuisance Weed Control. This section is intended to supplement the information in the following section, **Northwest Region, Area 1 – Roadside Vegetation Management Plan** which details the guidelines and methods for accomplishing the work of roadside vegetation management. The goals for NW Region, Area 1 are listed in relation to the responsibility of the crews on the west and east sides of the area.

### **Control of Vegetative Obstructions**

Since the work of this group of maintenance activities relates to the safety and operation of the highway, these items are considered first priority in terms of the overall roadside maintenance priority. Activities and locations of greatest need include:

- Expand the mowing of Vegetation obstructions throughout the area to increase site distance where needed throughout the area.

#### **WEST SIDE**

- Mow as needed for brush control and sight distance SR 542 mp 2 to mp 54
- Mow as needed for brush control and sight distance SR 547 mp 0 to mp 10
- Mow as needed for brush control and sight distance SR 9 mp 66 to mp 71.
- Mow as needed for sight distance SR 546 mp 0 to mp 8.
- Mow as needed for sight distance SR 544 mp 5 to mp 6.
- Mow ditches for snow drifting, winter drainage and site distance late summer SR 539 mp 11 to mp 15
- Grade shoulders for sod build for hydraulic flow of storm water off the roadway surface SR 546 mp 0.5 to mp 3
- Grade shoulders for sod build for hydraulic flow of storm water off the roadway surface SR 544 mp 4 to mp 5.3
- Grade shoulders for sod build for hydraulic flow of storm water off the roadway surface SR 547 mp 0 to mp 10
- Remove danger trees as necessary, do an inspection in early fall for all routes.
- We will be trimming trees on SR 542 from MP 33 to 54 and removing some hazard trees through this area.
- Cut Alders I-5 from mp 235 to mp 250 in the median and treat stumps with Garlon 4A at a rate that is recommended on label

#### **EAST SIDE**

- Mow on/off ramp interchanges as needed for brush control and sight distance I-5 mp 231 to mp 276
- Mow as needed for brush control and sight distance SR 11 mp 0 to mp 21
- Mow as needed for brush control and sight distance SR 548 mp 0 to mp 13
- Mow as needed for sight distance SR 543 mp 0 to mp 1

### **Noxious Weed Control**

Noxious weeds are those species legally designated by state and county regulations for required control by all property owners. Because laws are enforced with fines and/or control work and billing of property owners by county administration, work under this group is considered second priority after critical safety related locations have been addressed. Species and locations are negotiated with the county weed boards on an annual basis and for 2009 include:

## **EAST SIDE**

SR 542:

- We will target noxious weeds by spot spraying using a portable tank from mp 2 to mp 33 starting in early May if weather allows. We will mainly target Wild Chervil, Poison Hemlock and we will use Escort and Telar DF at a rate that is recommended on label. Also in May we will target Tansy Ragwort with Milestone at a rate that is recommended on label. In June, July and August we will mainly target Hawkweeds (orange, yellow, yellow devil and smooth), and Sulfur Cinquefoil and we will use Milestone VM at a rate that is recommended on label. For Knotweed we will use Habitat / MSO at a rate that is recommended on label.

SR 9:

- We will target noxious weeds by spot spraying using a portable tank from mp 66 to mp 96 starting in early May if weather allows. We will mainly target Wild Chervil, Poison Hemlock and we will use Escort and Telar DF at a rate that is recommended on label. Also in May we will target Tansy Ragwort with Milestone at a rate that is recommended on label. In June, July and August we will mainly target Hawkweeds (orange, yellow, yellow devil and smooth), and Sulfur Cinquefoil and we will use Milestone VM at a rate that is recommended on label. For Knotweed we will use Habitat / MSO at a rate that is recommended on label.

SR 539:

- We will target noxious weeds by spot spraying using a portable tank from mp 2.5 to mp 15 starting in early May if weather allows. We will mainly target Wild Chervil, Poison Hemlock and we will use Escort and Telar DF at a rate that is recommended on label. Also in May we will target Tansy Ragwort with Milestone at a rate that is recommended on label. In June, July and August we will mainly target Hawkweeds (orange, yellow, yellow devil and smooth), and Sulfur Cinquefoil and we will use Milestone VM at a rate that is recommended on label. For Knotweed we will use Habitat / MSO at a rate that is recommended on label.

SR 544,546 and SR 547:

- We will treat as necessary for noxious weeds on these routes; we have only a hand full of spots with noxious weeds that are small in population

## **WEST SIDE**

I-5:

- We will target noxious weeds by spot spraying using a portable tank from mp 231 to mp 276 starting in early May if weather allows. We will mainly target Wild Chervil, Poison Hemlock and we will use Escort and Telar DF at a rate that is recommended on label. Also in May we will target Tansy Ragwort with Milestone at a rate that is recommended on label. In June, July and August we will mainly target Hawkweeds (orange, yellow, yellow devil and smooth), and Sulfur Cinquefoil and we will use Milestone VM at a rate that is recommended on label. For Knotweed we will use Habitat / MSO at a rate that is recommended on label.

SR 11, 543, and 548:

- We will treat as necessary for noxious weeds on these routes; we have only a hand full of spots with noxious weeds that are small in population.

### **Nuisance Vegetation Control**

Nuisance vegetation control includes control/management of weed species that are recommended but not mandated, by state and county law. It also includes work such as mowing of grass and weeds in areas where a more neatly maintained appearance is desired such as in gateway interchanges or highways in urbanized areas. Because nuisance vegetation control is lower priority after safety related and legally mandated activities, the location and work actions listed below may be postponed depending on availability of resources.

### **EAST SIDE**

SR 9, 539, and 542:

- We will target some of our larger infestations. We will target mainly on Blackberry, Scotch Broom, We will make our applications in late summer and early fall. Scotch Broom will be mowed first then treated with Garlon 3A

SR 544, 546, and 547:

- We will treat as necessary for nuisance weeds on these routes; we have only a hand full of spots with nuisance weeds that are small in population

### **WEST SIDE**

I-5:

- We will target some of our larger infestations mainly on Blackberry, Scotch Broom and Canada and Bull thistle. We will make our applications in late summer and early fall. Scotch Broom will be mowed first then treated with Garlon 3A
- Special attention for right away appearance from mp 274 to mp 277 for 2010 Olympics.
- We will treat as necessary our smaller infestations of nuisance weeds as describe in section 2.3 of the IVM plan
- 

SR 11, 543, and 548:

- We will treat as necessary our smaller infestations of nuisance weeds as describe in section 2.3 of the IVM plan

## ***Northwest Region, Area 1 – Roadside Vegetation Management Plan***

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### **1. ROUTINE MAINTENANCE ACTIVITIES**

Roadside maintenance activities are considered routine when regular periodic treatment is required to keep vegetative growth from interfering with highway operational and maintenance objectives. Typical routine maintenance activities are maintenance of Zone 1 and certain types of mowing and trimming.

#### **1.1. Routine Shoulder Maintenance (Zone 1)**

WSDOT is currently re-evaluating its policy for maintenance of Zone 1. Past policy and practice will be refined over the coming years in response to findings from study of long-term benefit/cost resulting from alternative treatments. For the 2006 growing season, vegetation at the edge of pavement will be managed as follows on roadsides in this maintenance area:

##### **1.1.1. Guidelines**

- Zone 1 is maintained with the annual application of herbicides for all secondary roads in the area.
- For limited access freeways including I-5 and SR543, Zone 1 is only maintained around the base of guardrail.
- Where maintained, Zone 1 is 3' width or less.

##### **1.1.2 Methods**

- Herbicides being applied to Zone 1 include a non-selective, post emergent product (glyphosate) mixed with a non-selective, pre-emergent products (sulfometuron-methyl and chlorsulfuron, trade name Landmark).
- The area is also evaluating the effectiveness of the above mixture alone in comparison to this mixture with an additional non-selective, broad spectrum pre-emergent herbicide (flumioxazin, trade name Payload).
- Areas limited access freeways where Zone 1 is not maintained will be monitored for problems resulting from sod build-up and graded as necessary to allow for hydraulic flow of storm water off the roadway surface.
- See **Appendix A, Routine Maintenance Prescriptions, Zone 1 Maintenance**

##### **1.1.3 Locations**

- Areas for Zone 1 maintenance and areas set aside for evaluation of alternative practices are shown in **Appendix C, Zone 1 Map**

#### **1.2. Routine Mowing/Trimming (Zone 2)**

##### **1.2.1. Guidelines**

- Routine annual mowing only occurs in designated areas on Interstate 5 and SR543 adjacent to edge of pavement and in designated focus areas such as interchanges and landscaped areas adjacent to safety rest areas and in Blaine near the border crossing as described in **Section 3**.
- A detailed description of routine mowing patterns and timing is provided in **Appendix D, Routine Mowing Plan**.
- In all other areas mowing is only used as part of IVM treatments for weed and brush control as described below in **Section 2**.
- Annual mowing or trimming is also conducted as needed for select locations on secondary highways to preserve site distance at curves, intersections and any other highway entry points.

- There are also areas on certain designated highway sections that are annually mowed to prevent problems caused by drifting snow in winter months.
- Other areas that may be routinely mowed include grass areas in park and ride lots, narrow grass strips along highway infrastructures, and fence-lines adjacent to neighboring properties as deemed necessary by the Area Superintendent.

#### 1.2.2. Methods

- On I-5, routine annual mowing areas are designated as either single pass or multiple pass.
- Single pass mowing consists of one pass up to the maximum width of mowing equipment (25' max.) but may be as narrow as 6' depending on mowing equipment and the presence of existing visual lines such as ditches.
- In areas designated as multiple pass mowing roadsides are mowed out from edge of pavement to the right of way line, the edge of shrub or tree lines, or across the entire median widths.
- See **Appendix A, Routine Maintenance Prescriptions, Zone 2 Maintenance**

#### 1.2.3. Locations

- **Appendix D, Routine Mowing Map** shows locations where routine annual mowing occurs as one pass and as multiple passes. **Appendix D, Routine Mowing Plan** describes mowing priorities, timing and limits on the I-5 and SR534 corridors.

### 1.3. Hazard Tree Removal

#### 1.3.1. Guidelines

- Hazard tree removal is considered a routine maintenance activity because maintenance is constantly on the look out for any trees that pose an imminent threat to the highway or traffic, and whenever hazard trees are identified they are routinely removed as soon as possible.
- Hazard trees may be dead, leaning, or structurally unsound. Best horticultural judgment will be used in evaluating trees that appear diseased or structurally unsound or are believed to pose a long-term threat to determine the best course of action.
- Another consideration in removal of trees is the contribution to shading in areas prone to frost and ice formation on the highway surface. When such areas are identified, the surrounding canopy may be thinned through selective removal of large trees on the right of way.

#### 1.3.2. Methods

- Hazard trees are removed in such a manner to minimize damage and impact to the highway structure and other healthy trees and understory vegetation.

## **2. INTEGRATED VEGETATION MANAGEMENT ACTIVITIES**

For all vegetation management needs not addressed through routine maintenance as described above, activities are planned and carried out using the principles of Integrated Vegetation Management (IVM) and the decision making process diagrammed on Page 5 in **Figure 3**. IVM is a coordinated decision making process that uses the most appropriate vegetation management methods and strategy, along with a monitoring and evaluation system, to achieve long term roadside maintenance goals and objectives in an environmentally and economically sound manner. The goal in utilizing the IVM approach is the effective control of unwanted vegetation and the establishment of stable, low maintenance native or naturalized plant communities on the roadside that are compatible with:

- Highway maintenance and safety objectives
- Preservation of environmental quality
- Weed control requirements
- The concern's of WSDOT's customers and neighbors.

Long term, the use of the IVM approach can reduce the intensity and cost of maintenance, as well as minimizing the need to use herbicides.

### **2.1. Integrated Vegetation Management Planning and Tracking Database**

#### **2.1.1. Guidelines**

- An Integrated Vegetation Management Records database is available for use. This database is accessed through the same WSDOT network application as the Pesticide Application Records database.
- Any activities focused on treatment of a specific location and species infestation, or focused on treatment of any types of unwanted vegetation throughout the area will be documented with an initial IVM record outlining the long-term treatment plan. These same records will be updated over time whenever planned treatments are carried out, or when observations are made as to the success or failure of past treatments.
- Treatment records may be printed out and inserted into **Appendix G** of the plan binders for reference.

### **2.2. Noxious Weed Control**

#### **2.2.1. Guidelines**

- Noxious weed control is a high priority for WSDOT because of state law requiring control of designated species. Transportation rights of way are high priority locations for control of noxious weed species within the state because they cross and link so many adjacent properties and land uses.
- Whenever possible designated noxious weed species and infestations locations will be documented and treated following plans as defined by IVM record forms in the database.
- Washington State Law classifies noxious weeds in three classes: A, B, and C. All Class A species are required control wherever they occur statewide. The law allows for individual county weed boards to designate individual Class B and C weeds for control within the counties depending on how widespread and potentially harmful they are at the local level.

- For the purposes of this plan, noxious weeds are defined as species within any class designated or prioritized for control within the counties.
- For NW Region, Area 1 the following weeds designated for control are known to exist on state highway rights of way in Whatcom and Northwest Skagit Counties:

#### **Class A**

Class A noxious weeds are non-native species with a limited distribution in the state. No Class A weeds are known to exist on WSDOT rights of way in this area.

#### **Class B**

Class B weeds are more widespread than Class A, with control mandated by law only if infestations are generally limited and the species are designated within the individual counties by the County Noxious Weed Control Boards. The following designated Class B species are known to exist on WSDOT right of way:

<b>Common Name/Botanical Name</b>	<b>Whatcom</b>	<b>Skagit</b>
Knotweed sp./Polygonum sp.	◆	◆
Knapweed sp./Centaurea sp.	◆	◆
Purple loosestrife/Lythrum salicaria	◆	◆
Wild chervil/Anthriscus sylvestris	◆	◆
Ragwort tansy, Senecio jacobae	◆	◆
Sulfur cinquefoil/Potentilla recta	◆	
Orange hawkweed/Hieracium aurantiacum	◆	◆
Smooth hawkweed/Hieracium laivigatum	◆	◆
Scotch broom/Cytisus scoparius		◆

#### **Class C**

Class C noxious weeds are widely established throughout Washington or may impact the agricultural industry. All Class C noxious weeds on state right of way in Whatcom and Skagit Counties in NW Region, Area 1 are managed as nuisance weeds and described in **Section 2.3**.

#### **2.2.2. Methods**

- Because noxious weed species are often difficult to control, herbicides treatments are often the primary, initial means of control.
- If infestations are limited to a few plants, hand pulling is also effective when the entire root system is also removed. Maintenance employees are encouraged to be aware of and look for new noxious weed occurrences, and to stop and pull these plants whenever possible.
- In conjunction with weed control treatments, a variety of other measures may be taken to promote natural vegetative competition through seeding, planting, and soil enhancement. The IVM Record and database are essential to the execution and success of these control measures.
- For recommended treatments specific to noxious weed species, see **Appendix A, IVM Prescriptions, Noxious Weed Control**

### 2.2.3. Locations

- **Appendix E, Noxious Weed Location Map** shows locations where reoccurring infestations of noxious species are known to exist in NW Region, Area 1.

## 2.3. Nuisance Weed Control

### 2.3.1. Guidelines

- For the purposes of this plan, nuisance weed species are defined as species listed as Class B and C weeds on the state noxious weed lists, but not required for mandatory control within individual counties.
- Nuisance weed control, while not required by state law, provides many positive benefits to the overall condition of the roadside, enhances ecological function by maintaining and enhancing native plant communities, reduces the potential for continuing spread of weed infestations, and enhances visual quality.
- Nuisance weed species will be controlled when time and budget allows.
- Priority will be given to locations with the highest chance for success including relatively new infestations and where there is potential for infestations to spread to un-infested areas of the right of way or to un-infested neighboring properties.
- Species designated as nuisance weeds in NW Region, Area 1 that are known to exist on the highway right of way include:

<i><b>Common Name/Botanical Name</b></i>	<i><b>Whatcom</b></i>	<i><b>Skagit</b></i>
Butterfly bush/Buddleja davidii	◆	◆
Poison hemlock/Conium maculatum	◆	◆
St. Johnswort/Hypericum perforatum	◆	◆
Sulfur cinquefoil/Potentilla recta		◆
Common tansy/Tanacetum vulgare	◆	◆
Bull thistle/Cirsium vulgare	◆	◆
Canada thistle/Cirsium arvense	◆	◆
Scotch broom/Cytisus scoparius	◆	
Wild carrot/Daucus carota	◆	◆
Yellow Toadflax/Linaria vulgaris	◆	◆
Common Mullein/Verbascum thapsus	◆	◆
Hairy Willow Herb/Epilobium hirsutum	◆	◆
Himalayan blackberry/Rubus discolor	◆	◆

### 2.3.2. Methods

- Control measures for nuisance weed are dependent on the species.
- Woody species such as Scotch broom and Himalayan blackberry are most effectively treated with a combination of cutting, herbicide treatments and encouragement of native vegetation.
- Perennial species such as Canada thistle are most effective controlled by succeeding years of properly timed herbicide applications.
- Annual or biennial species such as bull thistle and common tansy may also be effectively controlled with herbicide applications when

plants are in the rosette stage in spring, or by hand pulling prior to seed set.

- See **Appendix A, IVM Prescriptions, Nuisance Weed Control.**

## **2.4. Tree and Brush Control**

### **2.4.1. Guidelines**

- Trees and brush are controlled for safety reasons including preservation of sight distance at curves and intersections, and for visibility of signs, and preventing trees with potentially large trunk diameter or potential to fall on the highway from growing too close to traffic lanes.
- Native large shrub and small stature tree species should be allowed to grow and mature in Zone 2 and selectively trimmed if they begin to encroach on site distance or other traffic operational requirements.
- Any tree with a trunk diameter of 4" or greater is considered a hazard for errant vehicles in Zone 2 and should be removed. This zone is also referred to as the Design Clear Zone and is typically maintained to a width of 30' from the traffic lane edge. Actual minimum widths are determined by roadway alignment, traffic speed and volume, and cross-section of the roadside, as specified in the WSDOT Design Manual, Chapter 700.04.  
[www.wsdot.wa.gov/fasc/EngineeringPublications/Manuals/DesignManual.pdf](http://www.wsdot.wa.gov/fasc/EngineeringPublications/Manuals/DesignManual.pdf)
- Some hardwood deciduous tree species are prone to failure when mature and have the potential to fall on the highway. Whenever possible, particularly on interstate routes, alder, birch, bigleaf maple, and cottonwood species will be removed when growing on the right of way within 70' of the pavement.

### **2.4.2. Methods**

- Removal of undesirable tree and brush species is typically accomplished by hand cutting, hand pulling, properly timed selective mowing, properly timed herbicide applications, or combinations thereof.
- In some locations it is most effective to mow back the majority of the existing undesirable vegetation and then selectively treat re-growth with herbicides in succeeding years, allowing desirable vegetation to grow up around and form a competitive cover.
- In some cases when tree and brush species are cut by hand, the debris can be fed through a chipper and placed back on the roadside in the form of mulch for soil enhancement and weed prevention.
- Timing of activities has a significant effect on how the vegetation grows back. Herbicide applications made by hand, directly to the cut surfaces of undesirable plants may be used to reduce or eliminate grow back.
- Chemical control methods will not be used on conifers greater than 2 feet in height and/or large dense patches of young trees, to avoid unnecessary negative visual impacts from "brown-out".
- Chemical control methods will not be used on deciduous plants until after the first of September, except for as stump treatments in conjunction with mechanical cutting to eliminate grow-back.

- When possible, safe and practical, seedlings of desirable trees may be dug or pulled by hand and transplanted to areas where there growth will be beneficial and appropriate. In some locations agreements may be signed to allow private citizens to collect seedlings for use as transplants.
- See **Appendix A, IVM Prescriptions, Tree and Brush Control.**

### **3. SPECIAL MAINTENANCE AREAS**

Special Maintenance Areas are any locations with unique maintenance requirements or special considerations for roadside vegetation management. These areas may include interchanges, community entrances or enhancement areas, areas maintained by cities, bicycle paths, storm water retention ponds, state park land, wellheads, environmentally sensitive areas, school zones and roadsides adjacent to individual properties with current or annual no-spray agreements.

#### **3.1. Interchanges/Intersections**

##### **3.1.1. Guidelines**

- Interchange areas are sometimes developed and maintained to a greater level than general roadside areas to include storm water management facilities, pedestrian areas, and permanent vegetation designed for screening, and visual enhancements for community entrances.

##### **3.1.2. Locations**

- Interchanges and intersections with unique maintenance considerations are listed in **Appendix F**, along with notes describing practices for each location.

#### **3.2. Formally Landscaped Sections**

##### **3.2.1. Guidelines**

- On areas along I-5 near Safety Rest Areas and in Blaine near the Canadian border, the roadsides have been planted with ornamental landscaping.

##### **3.2.2. Locations**

- Areas considered as formally landscaped are listed by route and begin and end milepost in **Appendix F**, along with notes describing practices for each location.

#### **3.3. City Maintenance Areas**

##### **3.3.1. Guidelines**

- In most cases where non-limited access highways exist within city limits, the roadside (all area outside the highway pavement and drainage systems) are maintained by the local city government.

##### **3.3.2. Locations**

- Areas where roadsides are maintenance by cities are listed by route and begin and end milepost in **Appendix F**.

#### **3.4. Herbicide Sensitive Areas**

##### **3.4.1. Guidelines**

- In some situations herbicide use is limited or restricted because of legal requirements, neighbor concerns, or WSDOT imposed environmental safety precautions.
- In these locations, vegetation must be managed without the use of herbicides or with only a limited palette of herbicide types.

##### **3.4.2. Locations**

- Herbicide sensitive areas and reason/type of limitations on herbicide use are listed by route and begin and end milepost in **Appendix F**.

### **3.5. Adopt-a-Highway and Neighbor Maintained Agreements**

#### **3.5.1. Guidelines**

- In some locations WSDOT has signed agreements with private citizens or neighboring businesses for maintenance of roadside vegetation.

#### **3.5.2. Locations**

- Areas with existing agreements for others to maintain a portion of the roadside are listed in **Appendix F**, along with notes describing arrangements for each location.

### **3.6. Storm Water Management Facilities**

#### **3.6.1. Guidelines**

- Storm water management facilities include bio-filtration swales, retention ponds and infiltration ponds.
- Storm water management facilities are managed for noxious and nuisance weeds, and hazard trees following the same guidelines mentioned in previous sections. The primary objectives with regard vegetation management within these facilities are maintenance of the functionality in terms of the designed volume of retention and water flow, and the maintenance of the surrounding fence
- Trees and brush should be cleared along both sides of the perimeter fencing for a width of approximately 8 feet as needed.
- Inlets and outfalls should be kept clear of vegetation and debris.

#### **3.6.2. Locations**

- Stormwater management facilities are listed by route and milepost in **Appendix F**.

### **3.7. Wetland Mitigation Sites**

#### **3.7.1. Guidelines**

- Wetland mitigation sites are carefully monitored through WSDOT's Environmental Services Office for up to 10 years following their creation to ensure compliance with environmental regulation.
- In most cases vegetation in these sites is planted and established through the construction and long-term monitoring process so that once they are turned over to maintenance, actions are not required unless noxious weeds or hazardous trees become an issue.
- In cases where mitigation sites have fulfilled their original permit requirements and have been turned back to maintenance, sites should be inspected on an annual basis to determine if any repairs or weed control is necessary.

#### **3.7.2. Locations**

- All wetland mitigation sites within NW Region, Area 1 are listed by the nearest route and milepost in **Appendix F**.

### **3.8. Designated IVM Treatment Sites**

#### **3.8.1. Guidelines**

- As discussed in **Section 2.1**, selected sites are designated for planning, carrying out and monitoring multi-year IVM treatments for control of weeds or other unwanted vegetation.
- IVM treatment sites are documented with an initial record in the IVM Treatment Database, to identify the problem to be addressed, location(s), management goals, and integrated treatment plan.
- Records are updated each time a treatment is made, results observed, or when the treatment plan is modified based on observations.

#### **3.8.2. Locations**

- All designated IVM treatment sites within NW Region, Area 1 are listed by the route and milepost in **Appendix F**. This list is updated annually as new sites may be added and successfully treated sites removed.

**Zone 1 Maintenance - Bareground Treatment**

	OPTION 1	OPTION 2	OPTION 3	OPTION 4
<b>TREATMENT TYPE:</b>	Gravel shoulder	Gravel shoulder	Gravel shoulder	Gravel shoulder
<b>MANAGEMENT GOALS:</b>	Vegetation free	Vegetation free	Vegetation free	Vegetation free
<b>METHOD:</b>	Annual herbicide application	Annual herbicide application	Annual herbicide application	Annual herbicide application
<b>EQUIPMENT:</b>	Spray truck w/ banned width nozzles	Spray truck w/ banned width nozzles	Spray truck w/ banned width nozzles	Spray truck w/ banned width nozzles
<b>MATERIALS:</b>	Payload 8 oz./acre + Oust 3 oz./acre	Milestone VM 7 oz./acre + Round Up Pro 64 oz./acre	Round Up Pro 64-128 oz./acre	Landmark 4.5-7 oz./acre + Razor Pro 64 oz./acre
<b>TIMING:</b>	Early Spring or Fall	Early Spring	Early to mid June	Early Spring
<b>IVM FOLLOW-UP:</b>	Evaluate control	Evaluate control	Evaluate control	Evaluate control
<b>REMARKS:</b>	Typically applied in a 2 to 3 ft. band.			

**Zone 1 Maintenance - Bareground Treatment**

**OPTION 5**

<b>TREATMENT TYPE:</b>	Around sensitive locations			
<b>MANAGEMENT GOALS:</b>	Vegetation free			
<b>METHOD:</b>	Annual herbicide application			
<b>EQUIPMENT:</b>	Spray truck w/ banned width nozzles			
<b>MATERIALS:</b>	Aquanet at 64 oz./acre + LI700 at 32 to 64 oz./100 gal.			
<b>TIMING:</b>	Early Spring or Fall			
<b>IVM FOLLOW-UP:</b>	Evaluate control			
<b>REMARKS:</b>	Typically applied in a 2 to 3 ft. band.			

**Zone 2 Maintenance - Tree and Brush**

	OPTION 1	OPTION 2	OPTION 3	OPTION 4
<b>TREATMENT TYPE:</b>	Conifer control	Deciduous tree and brush	Deciduous tree and brush	Deciduous tree and brush
<b>MANAGEMENT GOALS:</b>	Control vegetation obstruction	Control vegetation obstruction	Control vegetation obstruction	Control vegetation obstruction
<b>METHOD:</b>	Herbicide treatment	Herbicide treatment	Herbicide treatment	Stump Treatment
<b>EQUIPMENT:</b>	Spray truck w/ banned width nozzles	Spray truck w/ banned width nozzles	Spray truck w/ banned width nozzles	Dobber or Spray bottle
<b>MATERIALS:</b>	Garlon 3A 128 oz. and Escort 1 oz.	Milestone VM 5-7 oz. plus Garlon 3A 64 oz.	Krenite S	Garlon 3A 50/50 with water or suf. Garlon 4 50/50 with water or suf.
<b>TIMING:</b>	Late summer, early fall	Late summer, early fall	Late summer before leaf turn	Anytime
<b>IVM FOLLOW-UP:</b>	Evaluate control	Evaluate control	Evaluate control	Evaluate control
<b>REMARKS:</b>	Avoid brown out by spraying late in the season and spray only to appropriate height.			

**Noxious Weed Control - Japanese Knotweed**

	<b>OPTION 1</b>	<b>OPTION 2</b>		
<b>TREATMENT TYPE:</b>	Chemical application	Stem injection		
<b>ACTION THRESHOLD:</b>	Whenever present (dependent on available resources)	Smaller infestations and or near water		
<b>MANAGEMENT GOALS:</b>	Eradication and control only if your county requires.	Eradication and control only if your county requires.		
<b>METHOD:</b>	Spot treatment w/ herbicide	Stem injection w/ herbicide		
<b>EQUIPMENT:</b>	Truck mounted sprayer where possible, backpack sprayer where necessary.	Injection equipment		
<b>MATERIALS:</b>	Habitat/MSO 0.5-1 lbs. per acre	Concentrated Roundup at 2%		
<b>TIMING:</b>	Early to late bloom between July and August	Once seasonal growth has occurred		
<b>IVM FOLLOW-UP:</b>	Reapply if necessary following year. Restore site w/ native vegetation.	Re-treat green stems as necessary. Restore site w/ native vegetation		
<b>REMARKS:</b>				

**Noxious Weed Control - Knapweed sp.**

	<b>OPTION 1</b>	<b>OPTION 2</b>	<b>OPTION 3</b>	
<b>TREATMENT TYPE:</b>	Chemical application	Chemical application	Manual	
<b>ACTION THRESHOLD:</b>	As soon as plants appear.	As soon as plants appear.		
<b>MANAGEMENT GOALS:</b>	Eradication and control if required by your county.	Eradication and control if required by your county.	Eradication and control if required by your county.	
<b>METHOD:</b>	Spot treatment w/ herbicide	Spot treatment w/ herbicide is most affective.	Hand removal. Roots must also be removed. Remove plant from site.	
<b>EQUIPMENT:</b>	Tank sprayer where possible, backpack sprayer where necessary	Tank sprayer where possible, backpack sprayer where necessary.	Labor, transporation	
<b>MATERIALS:</b>	Milestone 5 to 7 oz./acre	Transline .66 to 1.33 pints/acre	none required	
<b>TIMING:</b>	Early budding stages	Early budding stages	Early budding stages	
<b>IVM FOLLOW-UP:</b>	Reapply as necessary. Seed and fertize to reduce weed competition.	Reapply as necessary. Seed and fertize to reduce weed competition.	Repeat as necessary. Seed and fertize to reduce weed competition.	
<b>REMARKS:</b>				

**Noxious Weed Control - Purple Loosestrife**

	<b>OPTION 1</b>	<b>OPTION 2</b>	<b>OPTION 3</b>	<b>OPTION 4</b>
<b>TREATMENT TYPE:</b>	Chemical application	Chemical application	Chemical application	Biological Agents
<b>ACTION THRESHOLD:</b>	whenever present	whenever present	whenever present	whenever present
<b>MANAGEMENT GOALS:</b>	Suppression and eradication of listed noxious weeds	Suppression and eradication of listed noxious weeds	Suppression and eradication of listed noxious weeds	Suppression and eradication of listed noxious weeds
<b>METHOD:</b>	Spot treatment w/ herbicide	Spot treatment w/ herbicide	Spot treatment w/ herbicide	
<b>EQUIPMENT:</b>	Backpack sprayer or pump can sprayer, pickup.	Backpack sprayer or pump can sprayer, pickup.	Backpack sprayer or pump can sprayer, pickup.	Pickup
<b>MATERIALS:</b>	Rodeo at 1-2 ozl/gallon, mixed with a non-ionic surfactant.	Auquaneat 4 pints/acre	Garlon 3A 6 to 8 quarts/acre	Galerucella Pusilla
<b>TIMING:</b>	July, August and Septemeber when mature plant appear.	July, August and Septemeber when mature plant appear.	July, August and Septemeber when mature plant appear.	During active growth
<b>IVM FOLLOW-UP:</b>	Monitor sites for re-growth. Reapply spot treatment as necessary.	Monitor sites for re-growth. Reapply spot treatment as necessary.	Monitor sites for re-growth. Reapply spot treatment as necessary.	Map and monitor release sites. Evaluate. Establish No spray & No mow zones.
<b>REMARKS:</b>	Apply during actively growing at or beyond bloom stage of growth. Best results are achieved when applications are made during summer or fall months. Fall treatment must be applied before a killing frost.			

**Noxious Weed Control - Wild Chervil**

	<b>OPTION 1</b>	<b>OPTION 2</b>		
<b>TREATMENT TYPE:</b>	Chemical application	Chemical application		
<b>ACTION THRESHOLD:</b>	As soon as plants appear.	As soon as plants appear.		
<b>MANAGEMENT GOALS:</b>	Eradication and control of noxious weeds.	Eradication and control of noxious weeds.		
<b>METHOD:</b>	Spot treatment w/ herbicide.	Spot treatment w/ herbicide.		
<b>EQUIPMENT:</b>	Truck mounted sprayer where possible, backpack sprayer	Truck mounted sprayer where possible, backpack sprayer		
<b>MATERIALS:</b>	2 oz./acre Escort and 7oz./acre Milestone VM	1-3 oz./acre Telar DF		
<b>TIMING:</b>	Prebloom April/May	Apply early post emergence to actively growing plants		
<b>IVM FOLLOW-UP:</b>	Repeat as necessary. Seed and fertilize to reduce weed competition.	Repeat as necessary		
<b>REMARKS:</b>	Reportedly, it tolerates 24-D			

**Noxious Weed Control - Tansy Ragwort**

	<b>OPTION 1</b>	<b>OPTION 2</b>	<b>OPTION 3</b>	<b>OPTION 4</b>
<b>TREATMENT TYPE:</b>	Chemical application	Chemical application	Manual	Bio-Control
<b>ACTION THRESHOLD:</b>	As soon as plants appear.	As soon as plants appear.	As soon as plants appear.	
<b>MANAGEMENT GOALS:</b>	Eradication and control if required by county.	Eradication and control if required by county.	Eradication and control if required by county.	Eradication and control if required by county.
<b>METHOD:</b>	Spot treatment w/herbicide	Spot treatment w/herbicide	Hand removal. May include cut stem.	
<b>EQUIPMENT:</b>	Tank sprayer where possible, backpack sprayer where necessary.	Tank sprayer where possible, backpack sprayer where necessary.		
<b>MATERIALS:</b>	Escort 1/2 to 1 oz./acre	Milestone VM 5 to 7 oz./acre	None required. Round -up in spray bottle for cut stem.	Flea beetle/Cinebar Moth
<b>TIMING:</b>	Spray by May	Spray by June	Pull by June	
<b>IVM FOLLOW-UP:</b>	Reapply as necessary. Seed and fertilize to reduce weed competition.	Reapply as necessary. Seed and fertilize to reduce weed competition.	Repeat as necessary. Seed and fertilize to reduce weed competition.	
<b>REMARKS:</b>				

**Noxious Weed Control - Sulfur Cinquefoil**

	<b>OPTION 1</b>	<b>OPTION 2</b>	<b>OPTION 3</b>	
<b>TREATMENT TYPE:</b>	Chemical application	Chemical application	Chemical application	
<b>ACTION THRESHOLD:</b>	When resources are available.	When resources are available.	When resources are available.	
<b>MANAGEMENT GOALS:</b>	Minimize populations,prevent further spread of nuisance weeds.	Minimize populations,prevent further spread of nuisance weeds.	Minimize populations,prevent further spread of nuisance weeds.	
<b>METHOD:</b>	Foliar treatment, mechanical.	Foliar treatment	Foliar treatment	
<b>EQUIPMENT:</b>	Truck mounted sprayer where possible, backpack spayer where necessary, mower.	Truck mounted sprayer where possible, backpack spayer where necessary, mower.	Truck mounted sprayer where possible, backpack spayer where necessary, mower.	
<b>MATERIALS:</b>	Crossbow 128 oz./acre	Milestone 4 to 7 VM oz./arce	Escort 1 to 2 oz./acre	
<b>TIMING:</b>	Spring	Spring	Spring	
<b>IVM FOLLOW-UP:</b>	Reapply as necessary. Seed and fertilize or plant to restore native plant community.	Reapply if necessary	Reapply if necessary	
<b>REMARKS:</b>				

**Noxious Weed Control - Hawkweed sp.**

	OPTION 1	OPTION 2		
<b>TREATMENT TYPE:</b>	Chemical application	Chemical application		
<b>ACTION THRESHOLD:</b>	Apply while actively growing	Apply while actively growing		
<b>MANAGEMENT GOALS:</b>	Eradication of listed noxious weeds.	Eradication of listed noxious weeds.		
<b>METHOD:</b>	Power sprayer	Power sprayer		
<b>EQUIPMENT:</b>	Spray tank	Spray tank		
<b>MATERIALS:</b>	Milestone VM 4 to 6 oz./acre	Transline .66 to 1 pint/acre		
<b>TIMING:</b>	Bolting stage	Bolting stage		
<b>IVM FOLLOW-UP:</b>	Multiple treatment as needed	Multiple treatment as needed		
<b>REMARKS:</b>				

**Noxious Weed Control - Scotch broom**

	<b>OPTION 1</b>	<b>OPTION 2</b>	<b>OPTION 3</b>	<b>OPTION 4</b>
<b>TREATMENT TYPE:</b>	Chemical application	Manual application	Mechanical application	Bio-Control
<b>ACTION THRESHOLD:</b>	Whenever new infestations occur (dependant on available resources)	Wherever present (dependant on available resources)	When resources are available.	When ever present
<b>MANAGEMENT GOALS:</b>	Minimize populations and prevent further spread of weed.	Minimize populations and prevent further spread of weeds.	Minimize populations and prevent further spread of nuisance weeds.	Minimize spread
<b>METHOD:</b>	Foliar treatment w/herbicide.	Hand pull	Mechanical control with follow-up cut stump treatment.	Bio-Control
<b>EQUIPMENT:</b>	Truck mounted sprayer where possible, backpack sprayer where necessary.	Weed wrench option, brown brush monitor	Mower, backpack sprayer where necessary.	Truck
<b>MATERIALS:</b>	Garlon 3A at 2 quartz with Escort 2 oz. with Phase per acre	Garlon 4 mix 2 to 1 with crop oil	Garlon 3A at 1 to 1 with water or surfactant	Exapionfuscirostre
<b>TIMING:</b>	Apply during actively growing season	Anytime	After mowing	release when actively growing.
<b>IVM FOLLOW-UP:</b>	Reapply as necessary. Seed and fertilize or plant to restore native plant community.	Reapply as necessary. Seed and fertilize or plant to restore native plant community.	Re-cut/treat as necessary. Seed and fertilize or plant to restore native plant community.	Evaluate, redeploy if necessary
<b>REMARKS:</b>				

**Nuisance Weed Control - Butterfly Bush**

	OPTION 1	OPTION 2	OPTION 3	
<b>TREATMENT TYPE:</b>	Chemical application	Chemical application	Chemical application	
<b>ACTION THRESHOLD:</b>	Whenever present	Whenever present	Whenever present	
<b>MANAGEMENT GOALS:</b>	Eradication	Eradication	Eradication	
<b>METHOD:</b>	Cut Stump	Broadcast spray	Broadcast spray	
<b>EQUIPMENT:</b>	Truck mounted sprayer where possible, backpack sprayer where necessary.	Power Spray	Power Spray	
<b>MATERIALS:</b>	Garlon 4 50/50 with MSO	Garlon 3A 64 oz./acre	Crossbow 64 oz./acre	
<b>TIMING:</b>	Late season	Early season to Mid season	Early season to Mid season	
<b>IVM FOLLOW-UP:</b>	Re-cut/treat as necessary.	Reapply if needed	Reapply if needed	
<b>REMARKS:</b>				

**Nuisance Weed Control - Poison Hemlock**

	OPTION 1	OPTION 2	OPTION 3	OPTION 4
<b>TREATMENT TYPE:</b>	Chemical application	Hand removal	Chemical application	Chemical application
<b>ACTION THRESHOLD:</b>	When plants appear	When plants appear	When plants appear	When plants appear
<b>MANAGEMENT GOALS:</b>	Eradication and control of listed noxious weeds.	Eradication and control of listed noxious weeds.	Eradication and control of listed noxious weeds.	Eradication and control of listed noxious weeds.
<b>METHOD:</b>	Spot treatment w/ herbicide	Hand removal. Remove plant from site	Spot treatment w/ herbicide	Spot treatment w/ herbicide
<b>EQUIPMENT:</b>	Backpack sprayer, pickup etc.	Labor, transporation	Backpack sprayer, pickup etc.	Backpack sprayer, pickup etc.
<b>MATERIALS:</b>	Telar 1 to 3 oz.	None required	Excort 1 to 2 oz./Phase	1 -2 percent per acre Glyphosate
<b>TIMING:</b>	Spray by April	Pull by Arpil	Apply to actively growing plan	Treat at bud to full bloom stage of growth
<b>IVM FOLLOW-UP:</b>	Reapply as necessary. Seed and fertilize to reduce weed competition.	Repeat as necessary. Seed and fertilize to reduce weed competition.	Repply as necessary	Reapply as necessary
<b>REMARKS:</b>	Use a nonionic surfactant or silicone surfactant			

**Nuisance Weed Control - St. Johnswort**

	OPTION 1	OPTION 2	OPTION 3	
<b>TREATMENT TYPE:</b>	Chemical application	Chemical application		
<b>ACTION THRESHOLD:</b>	When resources are available.	When resources are available.		
<b>MANAGEMENT GOALS:</b>	Minimize populations and prevent further spread of nuisance weeds.	Minimize populations and prevent further spread of nuisance weeds.		
<b>METHOD:</b>	Foliar treatment, mechanical.	Foliar treatment, mechanical.		
<b>EQUIPMENT:</b>	Truck mounted sprayer where possible, backpack sprayer where necessary, mower.	Truck mounted sprayer where possible, backpack sprayer where necessary, mower.		
<b>MATERIALS:</b>	Milestone VM 5 to 7 oz./acres	1-2 oz./acre Escort plus Phase		
<b>TIMING:</b>	Apply after weeds emerge	Apply after weeds emerge		
<b>IVM FOLLOW-UP:</b>	Reapply as necessary	Reapply as necessary		
<b>REMARKS:</b>	Repeat application as needed			

**Nuisance Weed Control - Sulfur Cinquefoil**

	<b>OPTION 1</b>	<b>OPTION 2</b>	<b>OPTION 3</b>	
<b>TREATMENT TYPE:</b>	Chemical application	Chemical application	Chemical application	
<b>ACTION THRESHOLD:</b>	When resources are available.	When resources are available.	When resources are available.	
<b>MANAGEMENT GOALS:</b>	Minimize populations,prevent further spread of nuisance weeds.	Minimize populations,prevent further spread of nuisance weeds.	Minimize populations,prevent further spread of nuisance weeds.	
<b>METHOD:</b>	Foliar treatment, mechanical.	Foliar treatment	Foliar treatment	
<b>EQUIPMENT:</b>	Truck mounted sprayer where possible, backpack spayer where necessary, mower.	Truck mounted sprayer where possible, backpack spayer where necessary, mower.	Truck mounted sprayer where possible, backpack spayer where necessary, mower.	
<b>MATERIALS:</b>	Crossbow 128 oz./acre	Milestone 4 to 7 VM oz./arce	Escort 1 to 2 oz./acre	
<b>TIMING:</b>	Spring	Spring	Spring	
<b>IVM FOLLOW-UP:</b>	Reapply as necessary. Seed and fertilize or plant to restore native plant community.	Reapply if necessary	Reapply if necessary	
<b>REMARKS:</b>				

**Nuisance Weed Control - Common Tansy**

	OPTION 1	OPTION 2	OPTION 3	
<b>TREATMENT TYPE:</b>	Whenever present	Whenever present	Whenever present	
<b>ACTION THRESHOLD:</b>	Whenever present	Whenever present	Whenever present	
<b>MANAGEMENT GOALS:</b>	Eradication	Eradication	Eradication	
<b>METHOD:</b>	Foliar treatment. Cut stem treatment.	Foliar treatment	Foliar treatment	
<b>EQUIPMENT:</b>	Truck mounted sprayer where possible, backpack sprayer where necessary.	Truck mounted sprayer where possible, backpack sprayer where necessary.	Truck mounted sprayer where possible, backpack sprayer where necessary.	
<b>MATERIALS:</b>	Telar 1 to 3 oz./acre	Escort 1 to 2 oz./acre	Milestone VM 3 to 5 oz./acre	
<b>TIMING:</b>	Anytime	Apply to actively growing vegetation in the Spring	Apply to actively growing vegetation in the Spring	
<b>IVM FOLLOW-UP:</b>	Re-cut/treat as necessary.	Retreat as necessary	Retreat as necessary	
<b>REMARKS:</b>				

**Nuisance Weed Control - Bull Thistle**

	OPTION 1	OPTION 2	OPTION 3	OPTION 4
<b>TREATMENT TYPE:</b>	Chemical application	Chemical application	Chemical application	Bio-Control
<b>ACTION THRESHOLD:</b>	Wherever present	Wherever present	Wherever present	
<b>MANAGEMENT GOALS:</b>	Eradication and control of selected nuisance weeds and brush.	Eradication and control of selected nuisance weeds and brush.	Eradication and control of selected nuisance weeds and brush.	Eradication and control of selected nuisance weeds and brush.
<b>METHOD:</b>	Foliar treatment w/ herbicide	Foliar treatment w/ herbicide	Foliar treatment w/ herbicide	Bio-Control
<b>EQUIPMENT:</b>	Truck mounted sprayer where possible, backpack sprayer where necessary.	Truck mounted sprayer where possible, backpack sprayer where necessary.	Truck mounted sprayer where possible, backpack sprayer where necessary.	
<b>MATERIALS:</b>	Transline at 2/3 - 1 1/3 pint/acre	Milestone VM 3 to 5 oz. per acre	Telar XP 1-3 oz./acre	Urophora Stylata
<b>TIMING:</b>	Apply from rosette to bud stage to actively growing thistle	Apply to young actively growing weeds.	Apply to young actively growing weeds.	Early growing stage
<b>IVM FOLLOW-UP:</b>	Repeat annually as necessary	Repeat annually as necessary	Repeat annually as necessary	Reapply as necessary
<b>REMARKS:</b>				

**Nuisance Weed Control - Canada Thistle**

	OPTION 1	OPTION 2	OPTION 3	OPTION 4
<b>TREATMENT TYPE:</b>	Chemical application	Chemical application	Chemical application	Bio-Control
<b>ACTION THRESHOLD:</b>	Wherever present	Wherever present	Wherever present	Wherever present
<b>MANAGEMENT GOALS:</b>	Eradication and control of selected nuisance weeds and brush.	Eradication and control of selected nuisance weeds and brush.	Eradication and control of selected nuisance weeds and brush.	Eradication and control of selected nuisance weeds and brush.
<b>METHOD:</b>	Foliar treatment w/ herbicide	Foliar treatment w/ herbicide	Foliar treatment w/ herbicide	
<b>EQUIPMENT:</b>	Truck mounted sprayer where possible, backpack sprayer where necessary.	Truck mounted sprayer where possible, backpack sprayer where necessary.	Truck mounted sprayer where possible, backpack sprayer where necessary.	
<b>MATERIALS:</b>	Transline at 2/3 - 1 1/3 pint/acre	Milestone VM 5-7 oz./acre	Telar XP 1-3 oz./acre	Rhinocyllus Conicus
<b>TIMING:</b>	Apply from rosette to bud stage to actively growing thistle	Pre bud stage	Apply to the bud at bloom stage	Early growing season
<b>IVM FOLLOW-UP:</b>	Repeat annually as necessary	Apply before first frost	Apply before first frost	Redeploy as needed
<b>REMARKS:</b>	For most effective control, apply as a broadcast treatment to the entire infested area.			

**Nuisance Weed Control - Wild Carrot**

	<b>OPTION 1</b>	<b>OPTION 2</b>		
<b>TREATMENT TYPE:</b>	Chemical application	Chemical application		
<b>ACTION THRESHOLD:</b>	Wherever present	Wherever present		
<b>MANAGEMENT GOALS:</b>	Eradication and control of selected nuisance weeds and brush.	Eradication and control of selected nuisance weeds and brush.		
<b>METHOD:</b>	Foliar treatment w/ herbicide	Foliar treatment w/ herbicide		
<b>EQUIPMENT:</b>	Truck mounted sprayer where possible, backpack sprayer where necessary.	Truck mounted sprayer where possible, backpack sprayer where necessary.		
<b>MATERIALS:</b>	Telar 1oz./acre	Crossbow 4 quarts/acre		
<b>TIMING:</b>	Apply from rosette to bud stage to actively growing thistle	Apply from rosette to bud stage to actively growing thistle		
<b>IVM FOLLOW-UP:</b>	Repeat annually as necessary	Repeat annually as necessary		
<b>REMARKS:</b>				

**Nuisance Weed Control - Yellow Toadflax**

	<b>OPTION 1</b>	<b>OPTION 2</b>	<b>OPTION 3</b>	
<b>TREATMENT TYPE:</b>	Chemical application	Chemical application	Chemical application	
<b>ACTION THRESHOLD:</b>	As soon as plants appear.	As soon as plants appear.	As soon as plants appear.	
<b>MANAGEMENT GOALS:</b>	Eradication and control only if your county requires.	Eradication and control only if your county requires.	Eradication and control only if your county requires.	
<b>METHOD:</b>	Spot treatment w/ herbicide	Spot treatment w/ herbicide	Spot treatment w/ herbicide	
<b>EQUIPMENT:</b>	Backpack sprayer or spray bottle, pickup, etc.	Backpack sprayer or spray bottle, pickup, etc.	Backpack sprayer or spray bottle, pickup, etc.	
<b>MATERIALS:</b>	Telar at label rates w/ silicon based surfactant at 2 to 3 oz./acre	Escort 1 to 2 oz./acre	Plateau 12 oz./acre with methylated seed oil	
<b>TIMING:</b>	When in bloom between June and August	When in bloom between June and August	Apply in the fall	
<b>IVM FOLLOW-UP:</b>	Reapply as necessary. Seed and fertilize to reduce weed competition.	Reapply as necessary. Seed and fertilize to reduce weed competition.	Reapply as necessary. Seed and fertilize to reduce weed competition.	
<b>REMARKS:</b>				

**Nuisance Weed Control - Common Mullein**

**OPTION 1**

<b>TREATMENT TYPE:</b>	Chemical application			
<b>ACTION THRESHOLD:</b>	Whe resources are available.			
<b>MANAGEMENT GOALS:</b>	Minimize population and prevent further spread of nuisance weeds.			
<b>METHOD:</b>	Foliar treatment, mechanical			
<b>EQUIPMENT:</b>	Truck mounted sprayer where possible, backpack spayer where necessary, mower.			
<b>MATERIALS:</b>	7oz./acre Milestone VM			
<b>TIMING:</b>	Spring			
<b>IVM FOLLOW-UP:</b>	Reapply as necessary. Seed and fertilize or plant to restore native plant community.			
<b>REMARKS:</b>				

**Nuisance Weed Control - Hairy Willow Herb**

	<b>OPTION 1</b>	<b>OPTION 2</b>		
<b>TREATMENT TYPE:</b>	Chemical application	Chemical application		
<b>ACTION THRESHOLD:</b>	As soon as plants appear.	As soon as plants appear.		
<b>MANAGEMENT GOALS:</b>	Eradication and control of listed noxious weeds.	Eradication and control of listed noxious weeds.		
<b>METHOD:</b>	Spot treatment w/ herbicide most effective.	Spot treatment w/ herbicide most effective.		
<b>EQUIPMENT:</b>	Tank sprayer where possible, backpack sprayer where necessary.	Tank sprayer where possible, backpack sprayer where necessary.		
<b>MATERIALS:</b>	Garlon 3 64 oz./acre	Aquamaster 64 oz./acre		
<b>TIMING:</b>	Summer during bud-bloom	Summer during bud-bloom		
<b>IVM FOLLOW-UP:</b>	Reapply as necessary. Seed and fertilize to reduce weed competition.	Reapply as necessary. Seed and fertilize to reduce weed competition.		
<b>REMARKS:</b>				

**Nuisance Weed Control - Himalayan Blackberry**

	<b>OPTION 1</b>	<b>OPTION 2</b>		
<b>TREATMENT TYPE:</b>	Chemical application	Mechanical application		
<b>ACTION THRESHOLD:</b>	Whenever present (dependant on resources)	When resources are available.		
<b>MANAGEMENT GOALS:</b>	Control and eradicate if county requires.	Minimize populations and prevent further spread of weed.		
<b>METHOD:</b>	Foliar treatment w/ herbicide	Mechanical control with follow-up cut stump treatment.		
<b>EQUIPMENT:</b>	Truck mounted sprayer where possible, backpack sprayer where necessary.	Mower or hand labor, backpack sprayer or spray bottle where necessary.		
<b>MATERIALS:</b>	Krenite 1.5-6 gallons/acre	Crossbow 1.25-1.5 gallons/acre		
<b>TIMING:</b>	In the Fall, after berries drop.	After mowing, in the fall.		
<b>IVM FOLLOW-UP:</b>	Reapply as necessary. Seed and fertilize or plant to restore native plant community	Reapply as necessary. Seed and fertilize or plant to restore native plant community		
<b>REMARKS:</b>				

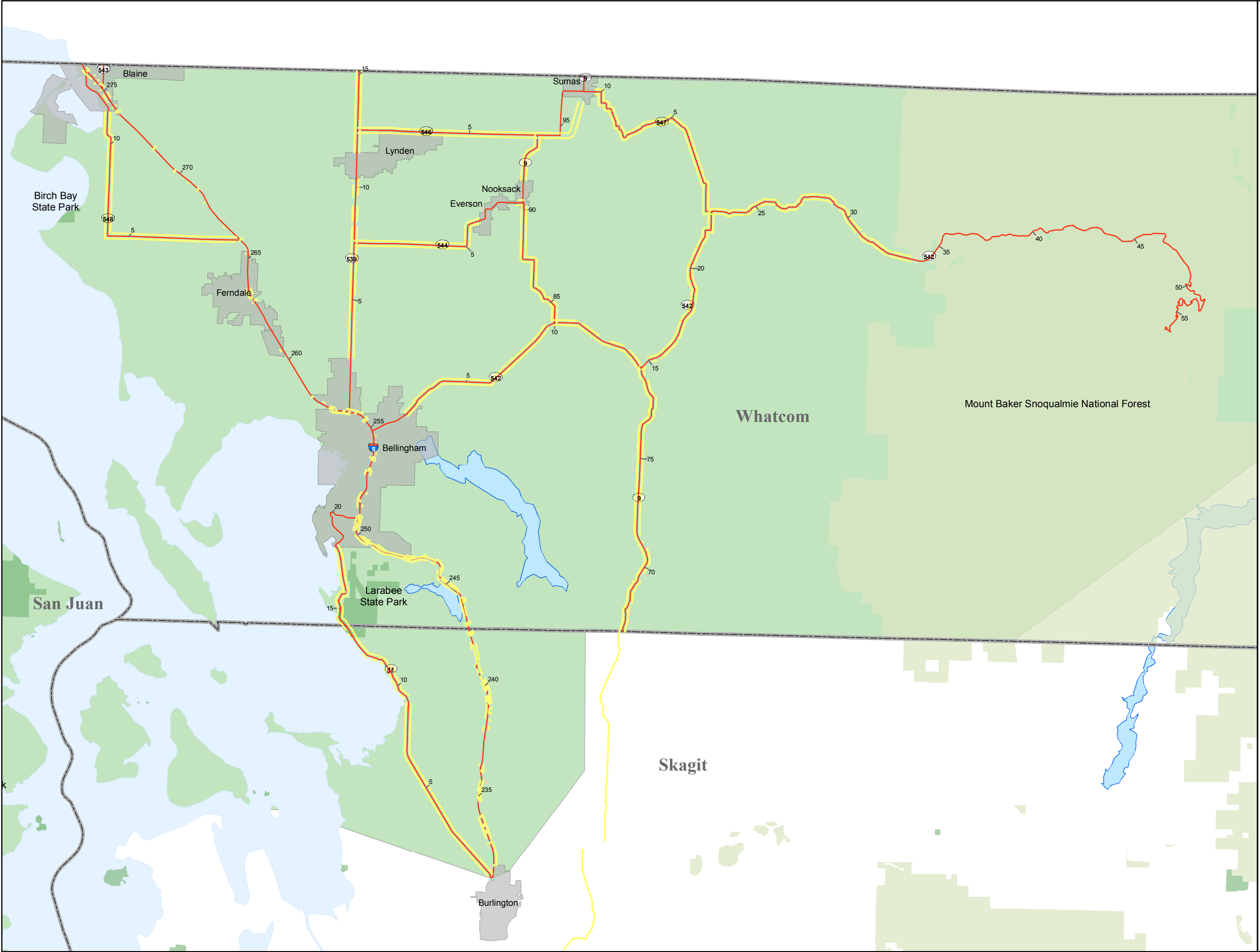
Herbicides Approved for Use on WSDOT Rights of Way

When making herbicide applications:

- 1. Always read and follow product labels
- 2. Always use personal protective equipment when mixing, loading, and applying

Chemical Name	Product Name(s)	Where Used	How/Why Used	Notes/Recommendations	Restrictions	Cautions
2,4-D	Weedar 64 Amine 4 Veteran 720 Curtail WeedDestroy Platoon Crossbow Escalade Weedmaster Solution Savage Weedone LV4	Noxious and nuisance weed control, and tree and brush control, Zones 2 and 3	Selective broadleaf treatment	Ester and acid formulations of 2,4-D may provide a good alternative to amine formulations. A number of the 2,4-D products come premixed with other herbicides.	Amine formulations of 2,4-D are restricted for use within 60' of all water	Amine formulations cause irreversible eye damage and are highly toxic to rainbow trout. All 2,4-D products pose risks when applied near grapes and other sensitive crops.
Bromacil	Krovar 1 DF Hyvar	Zone 1	Nonselective pre-emergent grass and weed control	Krovar and Hyvar are premixed with diuron	<u>Westside</u> - Restricted for use <u>Eastside</u> - Krovar restricted for use within 60' of all water	Bromacil is potentially mobile in soil, use caution if rain is possible.
Bromoxynil	Buctril 2EC BroClean Brox 2E	Noxious and nuisance weed control, Zones 2 and 3	Selective broadleaf treatment	Effective broadleaf weed control without grass seed suppression	<u>Westside</u> - Restricted for use <u>Eastside</u> - Restricted for use within 60' of all water	Highly toxic to fresh water fish
Chlorsulfuron	Telar XP Landmark XP	Noxious and nuisance weed control, Zones 2 and 3	Selective broadleaf treatment	Product highly effective on Canadian thistle and horsetail. Landmark is premixed with Oust.	None	None
Clopyralid	Transline Curtail Pathfinder	Noxious and nuisance weed control, Zones 2 and 3	Selective broadleaf treatment	Curtail is premixed with 2,4-D, Pathfinder is premixed with triclopyr	Curtail and Pathfinder are restricted for use within 60' of all water because of mixture with other restricted herbicides.	Curtail contains 2,4-D amine which causes irreversible eye damage and is highly toxic to rainbow trout
Dicamba	Vanquish Veteran 720	Noxious and nuisance weed control, and tree and brush control, Zones 2 and 3	Selective broadleaf treatment	Vanquish is the dicamba formulation without 2,4-D	Veteran 720 is restricted for use within 60' of all water because of 2,4-D amine content	Veteran 720 contains 2-4-D amine which causes irreversible eye damage and is highly toxic to rainbow trout
Dichlobenil	Norosac 4G Casoron	Ornamental planting beds	Pre-emergent weed control in ground cover beds. Post emergent control of grasses.	Highly effective for pre-emergent control of unwanted weeds in ornamentals	Restricted for use within 60' of all water	Dichlobenil is highly toxic to aquatic insects
Diflufenzopyr	Overdrive	Noxious and nuisance weed control, Zones 2 and 3	Selective broadleaf treatment	None	None	None
Diuron	Karmex Diuron 4 L Diuron 80 DF	Zone 1	Nonselective pre-emergent grass and weed control	Cost effective weed control for Zone 1 in Eastern Washington	<u>Westside</u> - Restricted for use <u>Eastside</u> - Restricted for use within 60' of all water	Highly toxic to fish.
Flumioxazin	Payload	Zone 1	Nonselective pre-emergent grass and weed control	Second year of use in zone 1, still evaluating	Restricted for use within 60' of all salt water	Highly toxic to estuarine invertebrates
Fluroxypyr	Vista	Noxious and nuisance weed control, Zones 2 and 3	Selective broadleaf treatment	None	None	Highly toxic to Eastern Oyster, high surface runoff potential
Fosamine	Krenite S	Tree and brush control in Zones 2 & 3	Selective broadleaf treatment	Effective broadleaf tree control without visual impacts	None	None
Glyphosate	Roundup Pro Razor Pro Buccaneer Aquaneat Rodeo Aquamaster	Zone 1, spot spray around shrub and tree plantings, aquatic weed control (Rodeo, Aquamaster)	Nonselective control of all vegetation	Rodeo, Aquamaster and Aquaneat are approved for use in or over water. Aquatic versions of glyphosate products are approved for use with NPDES permit.	None	None
Imazapyr	Arsenal Habitat	Zone 1	Pre and post-emergent non-selective control of all vegetation	Habitat is an aquatic version of Arsenal - good alternative to glyphosate in certain cases	None	High surface runoff potential, potentially mobile in soil if rain is possible.
Isoxaben	Gallery 75DF	Turf & Ornamental	Pre-emergent weed control in ground cover beds	Works well by itself or with Ronstar	Restricted for use within 60' of all water	High surface runoff potential
Metsulfuron-methyl	Escort XP Metsulfuron Methyl 60 DF	Noxious and nuisance weed control, and tree and brush control, Zones 2 and 3	Selective broadleaf and conifer treatment	None	None	None
Norflurazon	Predict	Zone 1	Pre-emergent Weed control in Zone 1 and ground cover beds	Good Zone 1 product but may be difficult to keep in suspension	Restricted for use within 60' of all water	High surface runoff potential
Oryzalin	Oryzalin A.S. Surflan A.S	Zone 1 Ornamental planting beds	Pre-emergent Weed control in Zone 1 and ground cover beds	Product requires additional rinsing to thoroughly remove residues from empty container	Restricted for use within 60' of all water	Highly toxic to fish
Oxadiazon	Ronstar G Ronstar WSP	Turf & Ornamental	Pre-emergent weed control in ground cover beds	Works well by itself or with Gallery	Restricted for use within 60' of all water, gardens, plants bearing edible fruit	Highly toxic to fish
Pendimethalin	Pendulum 2G Pendulum Aqua	Zone 1 Turf & Ornamental	Nonselective Pre-emergent grass and weed control	None	<u>Westside</u> - Restricted for use <u>Eastside</u> - Restricted for use within 60' of all water	Highly toxic to fish, high potential for loss on eroded soil
Picloram	Tordon	Noxious and nuisance weed control, Zones 2 and 3	Selective broadleaf treatment	Highly effective for conifer and broadleaf weed control in Eastern Washington	<u>Westside</u> - Restricted for use <u>Eastside</u> - Restricted for use within 60' of all water	Highly mobile in soil and readily adsorbed through roots of desirable trees
Pyraflufen	Edict	Noxious and nuisance weed control, Zones 2 and 3	2,-4-D substitute, effective on Kochia, Russian thistle	Effective with Roundup for Kochia control	Restricted for use within 60' of all water	Irreversible eye damage, highly toxic to Rainbow Trout
Sulfentrazone	Portfolio	Zone 1	Nonselective pre-emergent grass and weed control	New product available for use in 2006	<u>Westside</u> - Restricted for use <u>Eastside</u> - Restricted for use within 60' of all water	High surface runoff potential, potentially mobile in soil if rain is possible.
Sulfometuron-methyl	Oust Landmark XP	Zone 1	Nonselective pre/post emergent grass and weed control	Landmark is premixed with Telar	None	None
Tebuthiuron	Spike 80DF	Zone 1	Nonselective pre-emergent grass and weed control	None	<u>Westside</u> - Restricted for use <u>Eastside</u> - Restricted for use within 60' of all water	High surface runoff potential, potentially mobile in soil if rain is possible.
Triclopyr Amine	Garlon 3A	Noxious and nuisance weed control, and tree and brush control, Zones 2 and 3	Selective broadleaf treatment	None	None	Irreversible eye damage
Triclopyr Ester	Garlon 4 Crossbow Pathfinder	Noxious and nuisance weed control, and tree and brush control, Zones 2 and 3	Selective broadleaf treatment	Works well for invert applications. Crossbow is premixed with 2,4-D, Pathfinder with clopyralid	Restricted for use within 60' of all water	Highly toxic to fish

**Appendix C:**  
**Northwest Region Area 1**  
**Zone 1 Maintenance**  
**Map 1 of 1**



- Zone 1
- State Routes
- Mile Post
- County Boundaries
- State Park
- City Limits
- National Forest
- Major Lakes
- Coast
- NW Region Area 1



This plan describes the limits of routine annual mowing for limited access highways within Maintenance Area 1 in the Northwest Region. The areas that are routinely mowed are intended to be maintained as grass stands. Any mowing beyond annually mowed areas will be on an as needed basis, when planned as part of Integrated Vegetation Management (IVM) treatments for control of weeds and other undesirable brush and trees.

**General Guidelines for Annual Mowing Areas**

- 1) Annual routine mowing typically will begin around the first of May starting with designated gateway interchanges and landscape areas. These areas may be mowed again as needed throughout the summer as time and budgets allow. The goal in these areas is to maintain a mowed appearance throughout the year.
- 2) All other roadside areas will be mowed once per year in the widths and timing described below. The goal in these areas is to provide added highway delineation and to prevent the establishment of unwanted brush and trees along the edge of pavement.
- 3) Mowing height should be set at a minimum of 6 inches.
- 4) Avoid mowing slopes or wet areas with equipment that may result in tearing or rutting of the grass stand. Areas where bare soil is exposed from mowing practices or vehicles leaving the roadway should be re-seeded with grass the following fall or spring whenever possible.
- 5) When mowing around or next desirable shrubs, leave a 3 to 6 ft. buffer if possible to allow these plant populations to expand over time.

**Gateway Interchanges and Landscape/Urban Mowing Areas**

- 1) The following interchanges and roadside areas will be mowed out completely, beginning no earlier than the first of May, from edge of pavement to shrub/tree or fence lines, except where slopes are greater than 2:1. These areas may be mowed two or more times throughout the spring and summer to maintain a year-round mowed appearance.

**I-5:** SR 11 (Exit 231)

Cook Road, (Exit 233) (Should this one be one pass?)

SR 11 (Exit 250)

Samish Way - 36<sup>th</sup> Street (Exit 252)

Lake Way Drive (Exit 253)

State St. – Iowa St. (Exit 254) Except NW and SW quadrants, which are maintained by others through an Adopt-a-Highway agreement

Sunset Drive – SR542 (Exit 255)

Guide Meridian – SR 539 (Exit 256)

Northwest Ave. (Exit 257)

Ferndale, Main St. (Exit 262)

SR 543 (Exit 275)

SR 548, Blaine (Exit 276)

SR 11 (Exit 250) to SRMP 258: Outside shoulders will be mowed one pass, medians where grass areas exist (and accessible) will be mowed out completely or to the shrub/tree line if one exists. Shrub areas above walls and barriers through the center of Bellingham, will only be mowed/trimmed occasionally as needed to keep vegetation from encroaching on traffic operations.

**SR-543:** All interchanges

- 2) Grass within the following designated landscape areas will be mowed beginning no earlier than the first of April. These areas may be mowed multiple times throughout the spring and summer to maintain a neatly mowed appearance.

**I-5:** Adjacent to Bow Hill and Custer rest areas roadsides will be mowed out from edge of pavement to fences or existing shrub and tree lines from the beginning of the off-ramps to the ends of on-ramps. Throughout the landscaped areas along noise walls in Bellingham, all grass in-slopes will be mowed to the ditch-line or edge of shrub beds.

### **General Roadside Mowing Areas**

- 1) The following interchanges will be mowed one pass only, beginning no earlier than the first of May, adjacent to edge of pavement, except where slopes are greater than 2:1. The width of mowing pass in these cases is determined by the equipment being used, and will extend only to the bottom of the ditch line where present. These areas may be mowed two or more times throughout the spring and summer to maintain a roughly mowed appearance around the perimeter and a natural meadow appearance in the interior areas. (We could switch this to once per year after seed set)

**I-5:** Alger (Exit 240) and all interchanges through North Lake Samish (Exit 246)

Baker View Rd. (Exit 258) and all interchanges through Blaine (Exit 274), except as noted in section 1 above.

- 2) Road shoulders in all areas not included above, both outside shoulders and medians, will be mowed one time per year adjacent to the edge of pavement. Mowing of these areas will be timed to begin once top growth on grasses has matured and seed heads have developed, but no earlier than the first of June. The goal is to have all general roadside mowing areas completed by the end of July. Width of mowing in areas designated as single pass will be determined by the width of mowing equipment. Outside shoulders adjacent to steep (2:1 or greater) cut slopes will only receive one mowing pass adjacent to pavement and generally to the bottom of the slope or ditch-line. Steep fill slopes behind guardrail will only be mowed if accessible, and otherwise left un-mowed and treated with IVM methods as necessary for control of unwanted vegetation.

**I-5:** SR 11 (Exit 231) to SRMP 234.5: Outside shoulders will be mowed one pass, median where grass areas exist will be mowed out completely.

**SR-543:** While this corridor is under construction it will receive one pass mowing only as needed and where sections are not under contract.

**Appendix D:**  
**Northwest Region Area 1**  
**Routine Mowing**  
**Map 1 of 1**

**Legend**

- As Needed
- Multi Pass
- Single Pass
- 25 Mile Post
- State Routes
- State Park
- County Boundaries
- National Forest
- City Limits
- Major Lakes
- Coast
- NW Region Area 1



**Designated for control in NW area 1:**  
(Whatcom and Skagit County)

Knotweed sp./  
*Polygonum* sp.



Tansy Ragwort/  
*Senecio jacobaea*



Knapweed sp./  
*Centaurea* sp.



Purple Loosestrife/  
*Lythrum salicaria*



Wild chervil/  
*Anthriscus sylvestris*



Sulfur Cinquefoil/  
*Potentilla recta*

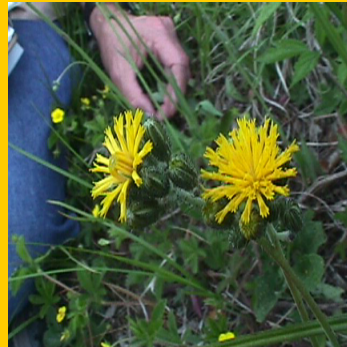


**Designated for control in NW area 1:**  
(Whatcom and Skagit County)

Orange Hawkweed/  
*Hieracium aurantiacum*



Smooth Hawkweed/  
*Hieracium laivigatum*



Scotch Broom/  
*Cytisus scoparius*



**Nuisance weeds in NW area 1:**  
(Whatcom and Skagit County)

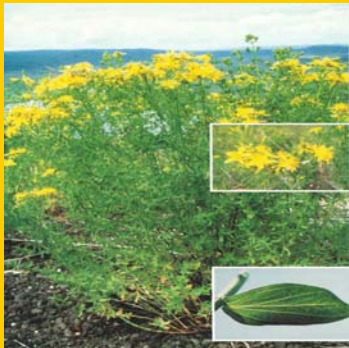
Butterfly Bush/  
*Buddleja davidii*



Poison Hemlock/  
*Conium maculatum*



St. Johnswort/  
*Hypericum perforatum*



\*Hairy Willow Herb/  
*Epilobium hirsutum*



Common Tansy/  
*Tanacetum vulgare*



Bull Thistle/  
*Cirsium vulgare*



**Nuisance weeds in NW area 1:  
(Whatcom and Skagit County)**

Canada Thistle/  
*Cirsium arvense*



Wild Carrot/  
*Daucus carota*



Yellow Toadflax/  
*Linaria vulgaris*



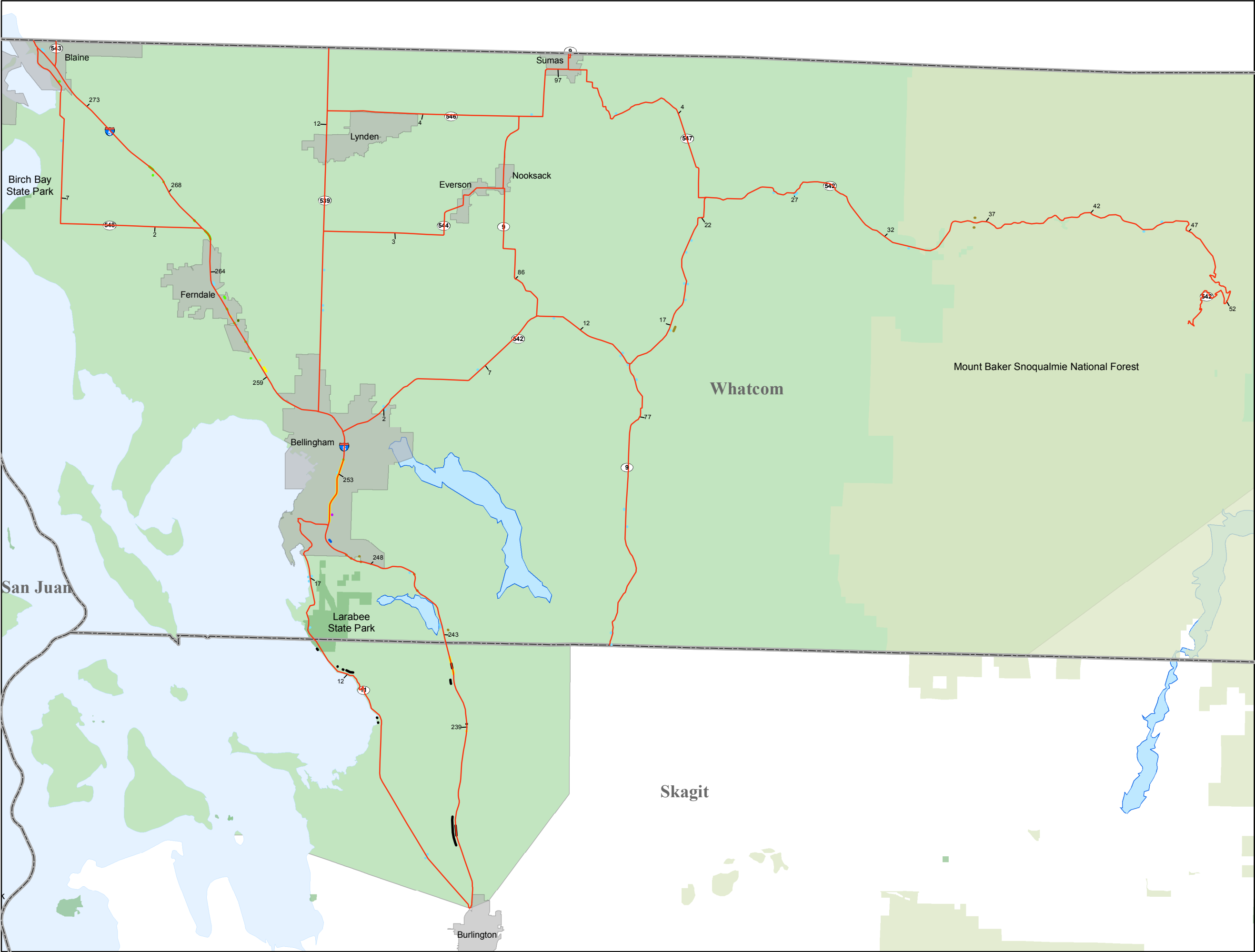
Mullein/  
*Verbascum thapsus*



Himalayan Blackberry/  
*Rubus discolor*



Appendix E:  
Northwest Region Area 1  
Noxious Weed Locations  
Map 1 of 1



Legend

- Hawkweed
- Japanese Knotweed
- Knapweed
- Purple Loosestrife
- Scotch Broom
- Spotted Knapweed
- Sulfur Cinquefoil
- Tansy Ragwort
- State Routes
- 45 Mile Post Marker
- County Boundaries
- State Park
- National Forest
- City Limits
- Major Lakes
- Coast
- NW Region Area 1



## Appendix F

## Special Maintenance Areas

**Table 3.0**

Locations are distinguished between the sides of the highway by right shoulder (RS) or left shoulder/median (LS) in relation to either increasing (INC) mile markers or decreasing (DEC) mile markers

Description - Brief explanation of special treatment required

SR	Direction	Shoulder	BEG MP	END MP	Type	Description
005	INC	RS	232.70	232.93	Exit 232 Cook Rd.	
005	INC	RS	236.19	236.52	Exit 236 Bow Hill Rd.	
005	INC	RS	237.79	238.41	Bow Hill Rest Area	
005	INC	RS	240.72	241.06	Exit 240 Samish Rd	
005	INC	RS	242.55	243.01	Exit 242 Nulle Rd. L. Samish	
005	INC	RS	246.29	246.48	Exit 246 - N. Lake Samish	
005	INC	RS	250.59	250.83	Exit 250 - Chuckanut Drive	
005	INC	RS	251.58	252.25	Exit 252 Samish Way WW U	
005	INC	RS	252.25	257.41	Formal Landscape	
005	INC	RS	253.01	253.19	Exit 253 Lakeway Dr.	
005	INC	RS	253.66	253.75	Exit 254 Iowa and State ST.	
005	INC	RS	254.62	255.04	Exit 255 Sunset Drive	
005	INC	RS	255.96	256.38	Exit 256A,B Meridan St.	
005	INC	RS	256.76	257.13	Exit 257 Northwest Ave.	
005	INC	RS	257.41	258.02	Exit 258 Bakerview Rd.	
005	INC	RS	259.88	260.30	Exit 260 Lum. Island Slater Rd	
005	INC	RS	262.43	262.72	Exit 262 Main St. Ferndale	
005	INC	RS	263.25	263.68	Exit 263 - Portal Way	
005	INC	RS	265.70	266.14	Exit 266 Custer Grandview Rd.	
005	INC	RS	267.37	268.05	Custer Rest Area	
005	INC	RS	269.95	270.40	Exit 270 Lynden Birch Bay	
005	INC	RS	273.95	274.18	Exit 274 Semiahoo	
005	INC	RS	274.96	275.18	Exit 275 Truck Customs H St.	
005	INC	RS	275.98	276.34	Exit 276 Blaine City Center	

005	DEC	RS	276.30	276.04	Exit 276 Blaine City Center	
005	DEC	RS	274.96	274.89	On ramp from SR 543	
005	DEC	RS	274.14	274.09	On ramp leaving Hughes Ave.	
005	DEC	RS	270.53	270.09	Exit 270 Lynden & Birch Bay	
005	DEC	RS	269.53	269.00	Bow Hill Rest Area	
005	DEC	RS	266.69	266.43	Joe Douglas Adopt-a-Highway	
005	DEC	RS	266.27	265.83	Exit 266 Grandview RD	
005	DEC	RS	263.82	263.46	Exit 263 - Portal Way	
005	DEC	RS	262.82	262.43	Exit 262 Main St. City Center	
005	DEC	RS	260.43	260.00	Exit 260 Lummi Island	
005	DEC	RS	257.99	257.47	Exit 258 Bakerview Road	
005	DEC	RS	257.47	252.25	Formal landscape	
005	DEC	RS	257.09	256.80	Exit 257 Northwest Ave.	
005	DEC	RS	256.44	256.05	Exit 256 Meridian St.	
005	DEC	RS	255.09	254.03	Exit 255 Sunset Dr. Mt. Baker	
005	DEC	RS	253.78	253.67	Exit 254 - Ohio St.	
005	DEC	RS	253.11	252.82	Exit 253 Lakeway Drive	
005	DEC	RS	252.25	251.75	Exit 252 Samish Way WWU	
005	DEC	RS	251.00	250.67	Exit 250 Chuckanut Drive	
005	DEC	RS	246.12	245.95	Exit 246 N. Lake Samish	

## Appendix F

## Special Maintenance Areas

**Table 3.0**

Locations are distinguished between the sides of the highway by right shoulder (RS) or left shoulder/median (LS) in relation to either increasing (INC) mile markers or decreasing (DEC) mile markers

Description - Brief explanation of special treatment required

SR	Direction	Shoulder	BEG MP	END MP	Type	Description
005	DEC	RS	243.04	242.72	Exit 242 - Nulle Rd.	
005	DEC	RS	241.17	240.83	Exit 240 - Alger	
005	DEC	RS	238.51	238.17	Bow Hill Rest Area	
005	DEC	RS	236.60	236.25	Exit 236 Bow Hill Rd	
005	DEC	RS	235.61	234.83	Weight Station	
005	DEC	RS	233.04	232.74	Exit 232 Cook Rd.	
005	DEC	RS	231.34	231.25	Exit 231 - Chuckanut Drive	
005	DEC	RS	231.25	231.08	On ramp from Chuckanut Dr.	
005			238.90		Colony Rd. Pit	
005			Exit 240		Gravel Pit Site	
005			Exit 270		Steine Rd. Pit Site	
005			Exit 275		"H" St. Pit Site	
005			Exit 275		Giles Rd. Pit Site	
005			249.47		Valley Park Addition Pit	
005			Axton Rd.		Eternal Flame Pit Site	
005			Exit 240		Butler Cr. Rd. Pit Site	
005			Exit 240		Alger Pit Site	
009	Both	RS	90.18	91.35	City of Nooksack	Maintain by city
009	Both	RS	96.61	98.17	City of Sumas	Maintain by city
009	Both	RS	72.05	72.05	RR Crossing at Grade	
009	Both	RS	73.91	73.91	RR Crossing at Grade	
009	Both	RS	77.38	77.38	RR Crossing at Grade	
009	Both	RS	86.28	86.28	RR Crossing at Grade	
009	Both	RS	90.32	90.32	RR Crossing at Grade	
009	Both	RS	97.47	97.47	RR Crossing at Grade	
009			79.00		Roadside Park Pit	
009			79.00		Pit Site W. of Nooksack R.	
011	Both	RS	13.44	15.03	Larabee State Park	
011	Both	RS	17.99	21.28	City of Bellingham	Maintain by city
011			16.00		Chuckanut Pit Site	
539	Both	RS	0.00	2.40	City of Bellingham	Maintain by city
539	Both	RS	10.44	11.53	City of Lynden	
539			Lynen Rd.		Willey Lake Rd. Pit	
539			8.80		Wiser Lake Pit Site	
542	Both	RS	0.00	1.70	City of Bellingham	Maintain by city
542	Both	RS	33.57	33.80	Mt. Baker Snoqualmie Nat. Forest	
542	Both	RS	34.07	34.31	Mt. Baker Snoqualmie Nat. Forest	
542	Both	RS	34.80	57.24	Mt. Baker Snoqualmie Nat. Forest	
542	Both	RS	11.05	11.05	RR Crossing at Grade	
542			20.55		Unnamed Pit	



**Washington State  
Department of Transportation**

## Integrated Vegetation Management Record

Org. Code	County	Date 6/13/2007	Vegetation Management Zone(s) <input type="checkbox"/> Zone 1 <input type="checkbox"/> Zone 2 <input type="checkbox"/> Zone 3																			
Area SE _____ MP _____ to MP _____		Location _____																				
Check Appropriate Boxes: <input type="checkbox"/> Roadside <input type="checkbox"/> Landscaped Area <input type="checkbox"/> Interchange <input type="checkbox"/> Mitigation Site <input type="checkbox"/> Third Party Damage <input type="checkbox"/> Sensitive Sites <input type="checkbox"/> NB <input type="checkbox"/> EB <input type="checkbox"/> Shoulder <input type="checkbox"/> Rest Area <input type="checkbox"/> Bridge <input type="checkbox"/> Stormwater <input type="checkbox"/> Yes <input type="checkbox"/> Aquatic <input type="checkbox"/> SB <input type="checkbox"/> WB <input type="checkbox"/> Median <input type="checkbox"/> Park-n-Ride <input type="checkbox"/> Ramp <input type="checkbox"/> Yard/Stockpile <input type="checkbox"/> Wetlands																						
Target <input type="checkbox"/> Noxious Weeds <input type="checkbox"/> Brush/Trees <input type="checkbox"/> Other <input type="checkbox"/> Nuisance Weeds <input type="checkbox"/> Hazard Tree <input type="checkbox"/> Last Target/Species: _____																						
Reason for Action: <input type="checkbox"/> Noxious Weeds <input type="checkbox"/> Nuisance Weeds <input type="checkbox"/> Fire Prevention <input type="checkbox"/> Restore Native Veg. <input type="checkbox"/> Zone 1 Pilot <input type="checkbox"/> Aesthetic <input type="checkbox"/> Site Distance <input type="checkbox"/> Hazard Vegetation <input type="checkbox"/> Customer Request <input type="checkbox"/> Enhance Vegetation <input type="checkbox"/> Slope Stabilization <input type="checkbox"/> Other _____																						
Long term IVM plan (Describe goals/objectives and a step-by-step approach over time) <div style="border: 1px solid black; height: 50px; width: 100%;"></div>																						
Approximate Acres to Accomplish <input type="text"/>																						
<table border="1"> <thead> <tr> <th>Activities</th> <th>Planned date of Treatment</th> <th>Actual date of Treatment</th> </tr> </thead> <tbody> <tr> <td>           Manual <input type="checkbox"/> Digging <input type="checkbox"/> Pulling <input type="checkbox"/> Planting  <input type="checkbox"/> Logging <input type="checkbox"/> Sealing <input type="checkbox"/> Other _____         </td> <td><input type="text"/></td> <td><input type="text"/></td> </tr> <tr> <td>           Mechanical <input type="checkbox"/> Aerial Saw Work <input type="checkbox"/> Tractor Brush Cutter <input type="checkbox"/> Mower/Clean  <input type="checkbox"/> Manual Brush Cutting <input type="checkbox"/> Tractor Mower <input type="checkbox"/> Other _____         </td> <td><input type="text"/></td> <td><input type="text"/></td> </tr> <tr> <td>           Bio-Control <input type="checkbox"/> Insect <input type="checkbox"/> Pathogen  <input type="checkbox"/> Parasite _____ Type/Species _____         </td> <td><input type="text"/></td> <td><input type="text"/></td> </tr> <tr> <td>           Cultural <input type="checkbox"/> Burning <input type="checkbox"/> Grading <input type="checkbox"/> Seeding  <input type="checkbox"/> Fertilizing <input type="checkbox"/> Grazing <input type="checkbox"/> Soil Amendment <input type="checkbox"/> Other _____         </td> <td><input type="text"/></td> <td><input type="text"/></td> </tr> <tr> <td>           Chemical <input type="text"/> Record Number _____         </td> <td><input type="text"/></td> <td><input type="text"/></td> </tr> </tbody> </table>					Activities	Planned date of Treatment	Actual date of Treatment	Manual <input type="checkbox"/> Digging <input type="checkbox"/> Pulling <input type="checkbox"/> Planting <input type="checkbox"/> Logging <input type="checkbox"/> Sealing <input type="checkbox"/> Other _____	<input type="text"/>	<input type="text"/>	Mechanical <input type="checkbox"/> Aerial Saw Work <input type="checkbox"/> Tractor Brush Cutter <input type="checkbox"/> Mower/Clean <input type="checkbox"/> Manual Brush Cutting <input type="checkbox"/> Tractor Mower <input type="checkbox"/> Other _____	<input type="text"/>	<input type="text"/>	Bio-Control <input type="checkbox"/> Insect <input type="checkbox"/> Pathogen <input type="checkbox"/> Parasite _____ Type/Species _____	<input type="text"/>	<input type="text"/>	Cultural <input type="checkbox"/> Burning <input type="checkbox"/> Grading <input type="checkbox"/> Seeding <input type="checkbox"/> Fertilizing <input type="checkbox"/> Grazing <input type="checkbox"/> Soil Amendment <input type="checkbox"/> Other _____	<input type="text"/>	<input type="text"/>	Chemical <input type="text"/> Record Number _____	<input type="text"/>	<input type="text"/>
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#1 Evaluation and Date <div style="border: 1px solid black; height: 40px; width: 100%;"></div>																						
#2 Evaluation and Date <div style="border: 1px solid black; height: 40px; width: 100%;"></div>																						
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**Washington State  
Department of Transportation**

## Pesticide Application

[illegible]

Entity	Mailing Address	Contact Person	Title	Phone	E-Mail
Whatcom County Noxious Weed Board	Whatcom Co. Public Works 901 W. Smith Rd. Bellingham, WA	Laurel Shiner	Coordinator	(360) 354-3990	<a href="mailto:LShiner@co.whatcom.wa.us">LShiner@co.whatcom.wa.us</a>
Skagit County Noxious Weed Board	MacGregor Building 302 S. First St. Mount Vernon, WA 98273	Bill Rogers	Coordinator	(360) 336 - 9430	<a href="mailto:williamr@co.skagit.wa.us">williamr@co.skagit.wa.us</a>
Skagit County Public Works	1800 Continental Place Mount Vernon, WA 98273	Cliff Butler	Operations Manager	360-336-9400 Fax: 336-9369	<a href="mailto:pw@co.skagit.wa.us">mailto:pw@co.skagit.wa.us</a>
Whatcom County Public Works	901 W. Smith Road Bellingham, WA 98226	Mary Green	M&O Superintendent	(360) 676-6759 Fax: 676-6879	<a href="mailto:MO@co.whatcom.wa.us">mailto:MO@co.whatcom.wa.us</a>
USFS District Office	810 State Route 20 Sedro Woolley, WA 98284	Ann Risvold	North Zone Botanist		<a href="mailto:arisvold@fs.fed.us">arisvold@fs.fed.us</a>
Nooksack Indian Tribe	5016 Deming Rd. PO Box 157 Deming, WA 98244	Robert "Bob" Kelly	Natural Resource Director	(360) 592-5176 Fax: 360-529-5753	<a href="mailto:rkelly@nooksacktribe.org">rkelly@nooksacktribe.org</a>
City of Bellingham	2221 Pacific St. Bellingham, WA 98229	Tom Rosenberg	Assistant Public Works Director, Operations	(360) 676-6850	<a href="mailto:trosenberg@cob.org">mailto:trosenberg@cob.org</a>
City of Lynden	323 Front St. Lynden, WA 98264	Duane Huskey	Public Works Director	(360) 354-3446 Fax: (360) 354-5749	<a href="mailto:huskeyd@lyndenwa.org">huskeyd@lyndenwa.org</a>
City of Blaine	1200 Yew Ave. Blaine, WA 98230	Leroy Dougall	Public Works Superintendent	(360) 332-8820 Fax: (360) 332-7124	<a href="mailto:Email: ldougall@cityofblaine.com">Email: ldougall@cityofblaine.com</a>
City of Everson	111 West Main Street Everson, WA 98247	Rick Holt	Public works Supervisor	(360) 966-3411 Fax: 966-4134	
City of Nooksack	Nooksack City Hall PO Box 4265 103 W. Madison St. Nooksack, WA	Dale	Public Works Department	(360) 966- 2531 Fax: (360) 966-2505	<a href="mailto:dale@cityofnooksak.com">dale@cityofnooksak.com</a>
City of Sumas	P.O. Box 9 Sumas, WA 98295	Administrator Knight	City Administrator	(360) 988-5711 Fax: (360) 988-8855	<a href="mailto:kdknightcityofsumas.com">kdknightcityofsumas.com</a>